Columbia University in the City of New York

CATALOGUE

1897-98

1897/98

C

Columbia University
in the City of New York

College of Physicians and Surgeons

Library

Digitized by the Internet Archive
in 2010 with funding from
Open Knowledge Commons

http://www.archive.org/details/catalogue1897colu

Columbia University in the City of New York

CATALOGUE

1897-98

Spec Coll
M-001
Serial
C
1897/1898

2500-1-30-'98

CONTENTS

PAGE

TRUSTEES ix
Standing Committees x
OFFICERS OF ADMINISTRATION xi
UNIVERSITY COUNCIL xii
OFFICERS OF INSTRUCTION 1
EMERITUS OFFICERS 14
GENERAL STATEMENT 15
METHOD OF ENTERING THE UNIVERSITY 16
FEES 17
Free and Reduced Tuition 19
Withdrawal 19
Students' Expenses 19
Committee on Aid for Students 20
FELLOWSHIPS, SCHOLARSHIPS, AND OTHER PROVISION FOR THE ASSISTANCE OF STUDENTS 20
In General 20
Columbia College 24
School of Medicine 27
School of Architecture 29
School of Political Science 30
Fellowship Regulations 30
Barnard Medal 31
Loubat Prizes 31
Grant Squires Prize 32
PRIVILEGES OPEN TO COLUMBIA STUDENTS IN OTHER INSTITUTIONS . 32
BARNARD COLLEGE 33
PUBLIC WORSHIP 33
THE LIBRARY 33
DEPARTMENTS OF INSTRUCTION 35
Anatomy 35
Anthropology 37
Architecture 38
Astronomy 42
Botany 43

PAGE

Chemistry 47
Dermatology 53
Diseases of Children 54
Economics and Social Science 54
Engineering 57
Civil Engineering 57
Electrical Engineering 61
Mechanical Engineering 65
English 71
English Language and Literature 71
Literature 73
Rhetoric and English Composition 74
Genito-Urinary and Venereal Diseases 75
Geology 76
Germanic Languages and Literatures 78
Greek 81
Gynecology 83
History and Political Philosophy 84
Laryngology 87
Latin 89
Law 90
Municipal or Private Law 90
Public Law and Jurisprudence 91
Materia Medica and Therapeutics 93
Mathematics 93
Mechanics 96
Metallurgy 98
Mineralogy 101
Mining 103
Music 107
Neurology 108
Obstetrics 109
Ophthalmology 110
Oriental Languages 110
Semitic Languages 110
Indo-Iranian Languages 113
Orthopædic Surgery 115
Otology 116
Pathology 116
Philosophy, Psychology, and Education 120
Physics 126
Physiology 129
Practice of Medicine 131
Romance Languages and Literatures 132
Surgery 139
Zoölogy 140

PAGE

UNIVERSITY DEGREES 145
Master of Arts and Doctor of Philosophy 145
Master of Laws 149
COLUMBIA COLLEGE 150
Officers and Standing Committees of the Faculty 150
The Faculty 151
Admission 152
Special Students 152
Examinations in Course 161
Proficiency and Deficiency 162
Honors 163
Sophomore Honors 163
Junior Honors 163
Final Honors 163
Graduation Theses 163
Honorable Dismission 164
Course of Study 164
Register of Students 168
SCHOOL OF LAW 176
Officers of the Faculty 176
The Faculty 176
From the Faculty of Political Science 176
Lecturers 176
Purposes of the School 176
Course of Instruction 177
Courses Recommended to Law Students 180
Moot Court 180
Requirements for Admission 180
Advanced Standing 180
Special Students 181
Examinations 181
Library 181
Admission to the Bar 181
Register of Students 182
SCHOOL OF MEDICINE (College of Physicians and Surgeons) . . . 193
Officers of the Faculty 193
The Faculty 193
General Statement 194
Vanderbilt Clinic 195
Sloane Maternity Hospital 196
Requirements for Admission 196
Curriculum 196
Clinics at Vanderbilt Clinic 200
Hospital Clinics 201
Board 203
Correspondence 203

PAGE
Examinations and Standing 203
Admission to Advanced Standing 203
Exemption from Physics and General Chemistry 203
Standing 204
At End of First Year 204
At End of Second Year 204
At End of Third Year 205
At End of Fourth Year and Final Examinations . . 207
Requirements for Graduation 209
Degree of Master of Arts 209
Hospital Appointments 210
Requirements for License to Practise Medicine in New York State 211
Medical Examinations 212
Register of Students 213
SCHOOLS OF MINES, CHEMISTRY, ENGINEERING, AND ARCHITECTURE . 230
Officers of the Faculty 230
Standing Committees 230
The Faculty 230
Courses of Instruction 231
Undergraduate Courses for the Professional Degrees . . 231
Elective Courses Open to Seniors in the College . . 232
Special Students 232
University Courses in Applied Science 232
Course in Mining Engineering 233
Course in Metallurgy 236
Courses in Analytical, Industrial, and Organic Chemistry . 238
Course in Civil Engineering 241
Course in Sanitary Engineering 243
Course in Electrical Engineering 245
Courses in Mechanical Engineering 247
Dynamic Engineering Alternative 249
Electrical Alternative 250
Mining Alternative 251
Course in Architecture 252
By-Laws 254
Admission 254
Enrolment and Certificates 254
Entrance Examinations 254
Preliminary Examinations 259
Diplomas and Certificates in Lieu of Examination . . 260
Admission and Conditions 260
Advanced Standing 260
Attendance 260
Examinations and Standing 261
Memoirs and Summer Work 262
Special Students 263
The Laboratories and Drawing Academies . . . 263
Order 263

PAGE

Excursions 263
Summer Schools 264
Apparatus Supplies 264
Register of Students 266
SCHOOL OF POLITICAL SCIENCE 277
Officers of the Faculty 277
The Faculty 277
Other Officers 278
General Statement 278
Admission and Attendance 279
Admission to Other Courses 279
Candidates for a Degree 280
Course of Instruction 280
Seminars 280
Order of Studies 281
Register of Students 282
SCHOOL OF PHILOSOPHY 287
Officers of the Faculty 287
The Faculty 287
General Statement 288
Admission and Attendance 288
Courses of Study and Research 289
Register of Students 290
SCHOOL OF PURE SCIENCE 298
Officers of the Faculty 298
The Faculty 298
General Statement 299
Special Regulations of the Faculty 299
Examinations 300
Special Students 300
Courses of Study 300
Register of Students 301
PUBLICATIONS OF THE UNIVERSITY 305
Columbia University Press 305
University Bulletin 305
Serial Studies and Contributions Issued from the University . . 306
DEGREES CONFERRED DURING 1896–97 307
FELLOWS AND SCHOLARS 311
AWARD OF PRIZES AND HONORS, COMMENCEMENT, 1897 . . . 315
BARNARD COLLEGE 318
TEACHERS COLLEGE 327
DIRECTORY OF OFFICERS 330
DIRECTORY OF STUDENTS 339
SUMMARY OF OFFICERS 361
SUMMARY OF STUDENTS 361
ACADEMIC CALENDAR 363
INDEX 365

TRUSTEES

Chairman

William C. Schermerhorn.....49 West 23d Street

Clerk

John B. Pine.....63 Wall Street

Morgan Dix, S.T.D., D.C.L.....27 West 25th Street
Stephen P. Nash, LL.D.....11 West 19th Street
Charles A. Silliman.....5 Washington Place, Troy, N.Y.
F. Augustus Schermerhorn.....61 University Place
Gerard Beekman.....5 East 34th Street
Abram N. Littlejohn, D.D., LL.D. (Cantab).....Garden City, L. I.
Edward Mitchell.....31 East 50th Street
W. Bayard Cutting.....32 Nassau Street
Seth Low, LL.D.....Columbia University
George L. Rives.....14 West 38th Street
Lenox Smith.....47 Cedar Street
John Crosby Brown.....36 East 37th Street
Henry C. Potter, D.D., LL.D. (Cantab).....29 Lafayette Place
William H. Draper, M.D.....19 East 47th Street
Marvin R. Vincent, S.T.D.....18 East 92d Street
Cornelius Vanderbilt.....1 West 57th Street
George G. Wheelock, M.D.....75 Park Avenue
Frederic R. Coudert, LL.D.....100 Broadway
Hermann H. Cammann.....51 Liberty Street
Edward B. Coe, D.D., LL.D.....42 West 52d Street
William Barclay Parsons.....22 William Street
Frederic Bronson.....74 Wall Street

Treasurer

John McLean Nash.....63 Wall Street

Office of the Trustees.....63 Wall Street

Standing Committees

1897

[Note.—The date after each name indicates the expiration of term of office.]

ON FINANCE

Mr. Cutting (1898) — Mr. Cammann (1899)
Mr. Mitchell (1900) — Mr. Brown (1901)
Mr. Rives (1902)

ON BUILDINGS AND GROUNDS

President Low (ex-officio), Chairman
Mr. Smith (1898) — Mr. Parsons (1899)
Dr. Wheelock (1900) — Mr. F. A. Schermerhorn (1902)
Mr. W. C. Schermerhorn (ex-officio) — Mr. Pine (ex-officio)

ON HONORS

Rev. Dr. Dix (1898), Chairman
Dr. Wheelock (1899) — Mr. Beekman (1900)
Mr. Rives (1901) — Mr. Nash (1902)

ON EDUCATION

Mr. W. C. Schermerhorn (ex-officio)
Rev. Dr. Vincent (1898) — Mr. Parsons (1898)
Mr. Cammann (1899) — Mr. Pine (1899)
Mr. Nash (1900) — Dr. Wheelock (1900)

ON THE LIBRARY

President Low (ex-officio), Chairman
Mr. Coudert (1898) — Mr. Brown (1899)
Mr. Nash (1899) — Bishop Potter (1900)
Secretary, the Librarian

OFFICERS OF ADMINISTRATION

SETH LOW, LL.D.,
President of the University

JOHN W. BURGESS, Ph.D., LL.D.,
Dean of the Faculty of Political Science

JAMES W. MCLANE, M.D.,
Dean of the Faculty of Medicine

NICHOLAS MURRAY BUTLER, Ph.D.,
Dean of the Faculty of Philosophy

WILLIAM A. KEENER, LL.D.,
Dean of the Faculty of Law

JOHN HOWARD VAN AMRINGE, Ph.D., L.H.D., LL.D.,
Dean of the College

ROBERT S. WOODWARD, C.E., Ph.D.,
Dean of the Faculty of Pure Science

HENRY S. MUNROE, E.M., Ph.D.,
Dean of the Faculty of Applied Science

GEORGE H. BAKER, A.M.,
Librarian

CHARLES ALEXANDER NELSON, A.M.,
Deputy Librarian

GEORGE R. VAN DEWATER, D.D.,
Chaplain

GEORGE WILLIAM WARREN, Mus. Doc.,
Lecturer on Music and Organist

WILLIAM H. H. BEEBE,
Secretary of the University

JOHN F. PLUMMER, Jr., A.B.,
Assistant Secretary of the University

EDWIN B. CRAGIN, M.D.,
Secretary of the Faculty of Medicine

EDWARD T. BOAG,
Registrar of the College of Physicians and Surgeons

EDWARD A. DARLING,
Superintendent of Buildings and Grounds

GEORGE F. FISHER,
Bursar

WATSON L. SAVAGE, A.B., M.D.,
Adviser on Physical Training

UNIVERSITY COUNCIL

[Note.—The date after each name indicates the expiration of term of office.]

President Low (ex-officio)

From the College

Prof. Van Amringe (ex-officio)
Prof. Peck (ex-officio)

From the Faculty of Law

Prof. Keener (ex-officio)
Prof. Burdick (1898)

From the Faculty of Medicine

Dr. McLane (ex-officio)
Dr. Curtis (1898)

From the Faculty of Applied Science

Prof. Munroe (ex-officio)
Prof. Hutton (1898)

From the Faculty of Political Science

Prof. Burgess (ex-officio)
Prof. Mayo-Smith (1898)

From the Faculty of Philosophy

Prof. Butler (ex-officio)
Prof. Perry (1898)

From the Faculty of Pure Science

Prof. Woodward (ex-officio)
Prof. Rees (1898), *Secretary of the Council*

From the Union Theological Seminary

Rev. Charles Cuthbert Hall, D.D.

PRESIDENT OF THE UNIVERSITY

SETH LOW, LL.D.....Columbia University

OFFICERS OF INSTRUCTION

Professors

J. HOWARD VAN AMRINGE, Ph.D., L.H.D., LL.D.....204 West 44th Street
Professor of Mathematics

OGDEN N. ROOD, A.M.....Columbia University
Professor of Physics

CHARLES F. CHANDLER, M.D., Ph.D., LL.D.....51 East 54th Street
Professor of Chemistry

JOHN W. BURGESS, Ph.D., LL.D.....323 West 57th Street
Professor of Political Science and Constitutional Law

HENRY S. MUNROE, E.M., Ph.D.....45 Sidney Place, Brooklyn, N. Y.
Professor of Mining

RICHMOND MAYO-SMITH, Ph.D.....305 West 77th Street
Professor of Political Economy and Social Science

JAMES W. MCLANE, M.D.....51 West 38th Street
Professor of Obstetrics

WILLIAM R. WARE, LL.D.....126 East 28th Street
Professor of Architecture

THOMAS R. PRICE, M.A., LL.D.....263 West 45th Street
Professor of the English Language and Literature

FREDERICK R. HUTTON, E.M., Ph.D.....296 Lexington Avenue
Professor of Mechanical Engineering

JOHN KROM REES, E.M., Ph.D.....1 West 72d Street
Professor of Astronomy

FRANCIS DELAFIELD, M.D., LL.D.....12 West 32d Street
Professor of the Practice of Medicine

MUNROE SMITH, A.M., J.U.D.....115th Street, Riverside Drive
Professor of Roman Law and Comparative Jurisprudence

JOHN G. CURTIS, M.D.....327 West 58th Street
Professor of Physiology

PIERRE DE PEYSTER RICKETTS, E.M., Ph.D.....115 East 79th Street
Professor of Analytical Chemistry and Assaying

GEORGE M. TUTTLE, M.D.....49 West 38th Street
Professor of Gynecology

FRANK J. GOODNOW, A.M., LL.D.....49 Riverside Drive
Professor of Administrative Law

RICHARD J. H. GOTTHEIL, Ph.D.....Columbia University
Professor of Rabbinical Literature and the Semitic Languages

GEORGE L. PEABODY, M.D.....57 West 38th Street
Professor of Materia Medica and Therapeutics

EDWIN R. A. SELIGMAN, Ph.D.....324 West 86th Street
Professor of Political Economy and Finance

HARRY THURSTON PECK, Ph.D., L.H.D.....New Rochelle, N. Y.
Professor of the Latin Language and Literature

NICHOLAS MURRAY BUTLER, Ph.D.....119 East 30th Street
Professor of Philosophy and Education

WILLIAM T. BULL, M.D.....35 West 35th Street
Professor of Surgery

WILLIAM HENRY CARPENTER, Ph.D.....253 West 100th Street
Professor of Germanic Philology

M. ALLEN STARR, M.D.....22 West 48th Street
Professor of Diseases of the Mind and Nervous System

ALFRED D. F. HAMLIN, A.M.....261 Warburton Avenue, Yonkers, N. Y.
Adjunct Professor of Architecture

ALFRED J. MOSES, E.M., Ph.D.....Box 14, North Tarrytown, N. Y.
Professor of Mineralogy

WILLIAM A. KEENER, LL.D.....86 East 56th Street
Kent Professor of Law

GEORGE S. HUNTINGTON, M.D.....50 East 73d Street
Professor of Anatomy

HERBERT L. OSGOOD, Ph.D.....526 West 150th Street
Professor of History

JAMES MCKEEN CATTELL, Ph.D.....Garrison, N. Y.
Professor of Psychology

FRANCIS M. BURDICK, LL.D .....115th Street, Riverside Drive
Dwight Professor of Law

GEORGE W. KIRCHWEY, A.B.....472 Lafayette Avenue, Brooklyn, N. Y.
Professor of Law

JOHN BASSETT MOORE, A.B.....524 West 150th Street
Hamilton Fish Professor of International Law and Diplomacy

HENRY FAIRFIELD OSBORN, Sc.D.....850 Madison Avenue
Da Costa Professor of Zoölogy

EDWARD DELAVAN PERRY, Ph.D.....133 East 55th Street
Jay Professor of Greek

FRANK DEMPSTER SHERMAN, Ph.B.....312 South Broadway, Yonkers, N. Y.
Adjunct Professor of Architecture

WILLIAM A. DUNNING, Ph.D.....Hotel Empire, Boulevard and 63d Street
Professor of History

ABRAHAM VALENTINE WILLIAMS JACKSON, L.H.D., Ph.D.16 Highland Pl.,
Professor of Indo-Iranian Languages Yonkers, N.Y.

ADOLPHE COHN, LL.B., A.M.....208 West 118th Street
Professor of the Romance Languages and Literatures

GEORGE EDWARD WOODBERRY, A.B.....5 East 17th Street
Professor of Literature

EDMUND B. WILSON, Ph.D.....305 West 78th Street
Professor of Invertebrate Zoölogy

JAMES FURMAN KEMP, A.B., E.M.....211 West 139th Street
Professor of Geology

ROBERT PEELE, E.M.....The Monterey, Morningside Park, 114th Street
Adjunct Professor of Mining

WILLIAM HALLOCK, Ph.D.....213 West 135th Street
Adjunct Professor of Physics

BRANDER MATTHEWS, A.M., LL.B.....681 West End Avenue
Professor of Literature

FRANCIS B. CROCKER, E.M., Ph.D.....44 West 44th Street
Professor of Electrical Engineering

MICHAEL IDVORSKY PUPIN, Ph.D.....7 Highland Pl., Yonkers, N. Y.
Adjunct Professor of Mechanics

ROBERT F. WEIR, M.D.....37 West 33d Street
Professor of Surgery

T. MITCHELL PRUDDEN, M.D.....160 West 59th Street
Professor of Pathology, and Director of the Laboratories of Histology, Pathology, and Bacteriology

WILLIAM H. BURR, C.E.....151 West 74th Street
Professor of Civil Engineering

ROBERT SIMPSON WOODWARD, C.E., Ph.D.....183 Claremont Ave.,
Professor of Mechanics Montclair, N. J.

HENRY ALFRED TODD, Ph.D.....720 West End Avenue
Professor of Romance Philology

GEORGE RICE CARPENTER, A.B.....501 West 113th Street
Professor of Rhetoric and English Composition

FRANKLIN HENRY GIDDINGS, Ph.D.....150 West 79th Street
Professor of Sociology

GEORGE F. CANFIELD, A.B., LL.B.....32 East 33d Street
Professor of Law

THOMAS SCOTT FISKE, Ph.D. ..... Columbia University
Professor of Mathematics

HAROLD JACOBY, Ph.D. ..... 15 West 53d Street
Adjunct Professor of Astronomy

JOHN B. CLARK, Ph.D., LL.D. ..... 280 West 70th Street
Professor of Political Economy.

JAMES RIGNALL WHEELER, Ph.D. ..... 433 West 117th Street
Professor of Greek

FRANK N. COLE, Ph.D. ..... Columbia University
Professor of Mathematics

JAMES HARVEY ROBINSON, Ph.D. ..... 170 West 85th Street
Professor of History

FREDERIC S. LEE, Ph.D. ..... 202 West 81st Street
Adjunct Professor and Demonstrator of Physiology

JAMES CHIDESTER EGBERT, Jr., Ph.D. ..... 364 Webster Ave.,
Adjunct Professor of Latin Jersey City Heights, N. J.

JAMES HERVEY HYSLOP, Ph.D ..... 519 West 149th Street
Professor of Logic and Ethics

CALVIN THOMAS, A.M. ..... 83 Highland Ave., Yonkers, N. Y.
Professor of the Germanic Languages and Literatures

HENRY WINTHROP HARDON, A.M., LL.B ..... 313 West 71st Street
Professor of Law

CARLO LEONARDO SPERANZA, A.M., B. ès L. ..... 128 East 63d Street
Adjunct Professor of the Romance Languages and Literatures

BASHFORD DEAN, Ph.D. ..... 20 West 82d Street
Adjunct Professor of Zoölogy

EDWARD ALEXANDER MACDOWELL, Mus. Doc. ... Hotel Majestic, 72d Street,
Professor of Music Central Park W.

LUCIEN MARCUS UNDERWOOD, Ph.D. ..... Columbia University
Professor of Botany

WILLIAM MILLIGAN SLOANE, Ph.D., L.H.D. ..... 109 East 69th Street
Seth Low Professor of History

HENRY MARION HOWE, A.M., B.S ..... 27 West 73d Street
Professor of Metallurgy

CHARLES E. PELLEW, E.M. ..... 51 East 54th Street
Adjunct Professor of Chemistry.

Clinical Professors and Lecturers

WILLIAM H. DRAPER, M.D. ..... 19 East 47th Street
Professor of Clinical Medicine

ABRAHAM JACOBI, M.D. ..... 110 West 34th Street
Clinical Professor of the Diseases of Children

GEORGE M. LEFFERTS, M.D.....6 West 33d Street
Clinical Professor of Laryngology and Rhinology

CHARLES McBURNEY, M.D.....28 West 37th Street
Professor of Clinical Surgery

GEORGE H. FOX, M.D.....18 East 31st Street
Clinical Professor of Diseases of the Skin

ALBERT H. BUCK, M.D.....14 East 45th Street
Clinical Professor of Diseases of the Ear

HERMAN KNAPP, M.D.....26 West 40th Street
Professor of Ophthalmology

ROBERT W. TAYLOR, M.D.....40 West 21st Street
Clinical Professor of Venereal Diseases

FRANCIS P. KINNICUTT, M.D.....42 West 37th Street
Professor of Clinical Medicine

VIRGIL P. GIBNEY, M.D.....16 Park Avenue
Clinical Professor of Orthopædic Surgery

ANDREW J. McCOSH, M.D.....22 East 56th Street
Clinical Lecturer upon Surgery

ALEXANDER B. JOHNSON, M.D.....46 West 17th Street
Clinical Lecturer in Surgery at the Roosevelt Hospital

A. BRAYTON BALL, M.D.....42 West 36th Street
Professor of Clinical Medicine

Demonstrators

BERN B. GALLAUDET, M.D.....102 West 85th Street
Demonstrator of Anatomy and Instructor in Surgery

JOHN S. THACHER, M.D.....33 West 39th Street
Demonstrator in Pathological Anatomy

FREDERICK J. BROCKWAY, M.D.....183 West 73d Street
Assistant Demonstrator of Anatomy

JOSEPH A. BLAKE, M.D.....3 West 68th Street
Assistant Demonstrator of Anatomy

GEORGE E. BREWER, M.D.....68 West 46th Street
Assistant Demonstrator of Anatomy

HOWARD D. COLLINS, M.D.....119 East 35th Street
Assistant Demonstrator of Anatomy and Clinical Assistant

RICHARD HOOP CUNNINGHAM, M.D.....200 West 56th Street
Demonstrator in Physiology and Clinical Assistant

CHARLES C. CARMALT, M.D.....40 East 58th Street
Assistant Demonstrator of Anatomy

WALTON MARTIN, M.D.....63 East 56th Street
Assistant Demonstrator of Anatomy and Clinical Assistant

WILLIAM H. ROCKWELL, Jr., M.D.....109 West 78th Street
Assistant Demonstrator of Anatomy

GEORGE W. CRARY, M.D.....152 West 57th Street
Assistant Demonstrator of Anatomy

ARTHUR SEYMOUR VOSBURGH, M.D.....437 West 59th Street
Assistant Demonstrator of Anatomy

GEORGE PATTEN BIGGS, M.D.....437 West 59th Street
Demonstrator of Pathology

Instructors

JAMES S. C. WELLS, Ph.D.....P. O. Box 81, Hackensack, N. J.
Instructor in Analytical Chemistry

ALEXIS A. JULIEN, Ph.D.....71 East 87th Street
Instructor in Geology and Curator

GEORGE C. FREEBORN, M.D.....215 West 70th Street
Instructor in Normal Histology

FRANK HARTLEY, M.D.....46 East 34th Street
Instructor in Operative Surgery

RALPH EDWARD MAYER, C.E.....Columbia University
Instructor in Drawing

IRA H. WOOLSON, E.M.....201 Franklin Street, Astoria, L. I.
Instructor in Drawing

CHARLES A. HARRIMAN.....174 West 109th Street
Instructor in Architectural Drawing

EUGENE HOWARD BABBITT, A.B.....Columbia University
Instructor in the Germanic Languages and Literatures

GRENVILLE TEMPLE SNELLING, B.S.....Hotel Beresford
Instructor in Architectural Engineering

CLARENCE H. YOUNG, Ph.D.....308 West 58th Street
Instructor in Greek

TIMOTHY MATLOCK CHEESMAN, M.D.....46 East 29th Street
Instructor in Bacteriology

LIVINGSTON FARRAND, A.B., M.D.....12 East 29th Street
Instructor in Physiological Psychology

GEORGE FRANCIS SEVER.....115 West 47th Street
Instructor in Electrical Engineering

BENJAMIN DURYEA WOODWARD, Ph.D.....462 West 22d Street
Instructor in the Romance Languages and Literatures

ANDREW E. FOYÉ, C.E.....163 West 79th Street
Instructor in Civil Engineering

IRA T. VAN GIESON, M.D.....1 Madison Avenue
Instructor in Pathology and Histology of the Nervous System

EUGENE HODENPYL, M.D.....143 West 73d Street
Instructor in Pathology

NELSON GLENN MCCREA, Ph.D.....533 Franklin Avenue, Brooklyn, N. Y.
Instructor in Latin

JAMES MACLAY, C.E.....312 Summer Avenue, Newark, N. J.
Instructor in Mathematics

EDWARD LEAMING, M.D.....437 West 59th Street
Instructor in Photography

REGINALD GORDON, A.B.....315 West 71st Street
Instructor in Physics

GEORGE W. JARMAN, M.D.....61 West 74th Street
Chief of Clinic and Instructor in Gynecology

WILLIAM S. STONE, M.D.....260 West 57th Street
Instructor in Gynecology

GEORGE R. LOCKWOOD, M.D.....44 West 49th Street
Instructor in Physical Diagnosis

WILLIAM K. DRAPER, M.D.....19 East 47th Street
Instructor in Physical Diagnosis

VAN HORNE NORRIE, M.D.....21 West 37th Street
Instructor in Physical Diagnosis and Clinical Assistant

ROYAL WHITMAN, M.D.....126 West 59th Street
Chief of Clinic and Instructor in Orthopædic Surgery

JAMES R. HAYDEN, M.D.....107 West 55th Street
Chief of Clinic and Instructor in Venereal and Genito-Urinary Diseases

ROBERT LEWIS, Jr., M.D.....14 East 45th Street
Instructor in Otology

WILLIAM COWEN, M.D.....35 East 60th Street
Chief of Clinic and Instructor in Otology

CHARLES H. MAY, M.D.....692 Madison Avenue
Chief of Clinic and Instructor in Ophthalmology

JOHN H. CLAIBORNE, M.D.....39 West 36th Street
Instructor in Ophthalmology

ELLSWORTH ELIOT, Jr., M.D.....48 West 36th Street
Chief of Clinic and Instructor in Minor Surgery at Vanderbilt Clinic

HERMANN T. VULTÉ, Ph.D.....New Rochelle, N. Y.
Instructor in General Chemistry

EDMUND HOWD MILLER, Ph.D.....Columbia University
Instructor in Analytical Chemistry and Assaying

FRANK W. JACKSON, M.D.....12 West 18th Street
Chief of Clinic and Instructor in General Diagnosis

JAMES DITMARS VOORHEES, M.D.....Sloane Maternity Hospital
Instructor in Obstetrics and Gynecology

WALTER B. JAMES, M.D.....268 Madison Avenue
Instructor in General Diagnosis

JOHN WINTERS BRANNAN, M.D.....11 West 12th Street
Instructor in General Diagnosis

JOHN B. WALKER, M.D.....33 East 33d Street
Assistant Instructor in Operative Surgery

JAMES EWING, M.D.....260 West 57th Street
Instructor in Clinical Microscopy

D. BRYSON DELAVAN, M.D.....1 East 33d Street
Chief of Clinic and Instructor in Laryngology

GEORGE T. JACKSON, M.D.....14 East 31st Street
Chief of Clinic and Instructor in Dermatology

FRANCIS HUBER, M.D.....209 East 17th Street
Chief of Clinic and Instructor in Diseases of Children

FREDERICK PETERSON, M.D..... 60 West 50th Street
Chief of Clinic and Instructor in Neurology

LUCIUS W. HOTCHKISS, M.D.....49 West 50th Street
Instructor in Surgery at Bellevue Hospital

FRANCIS H. MARKOE, M.D.....15 East 49th Street
Instructor in Surgery at Bellevue Hospital

MARSTON TAYLOR BOGERT, A.B., Ph.B.....259 Broadway, Flushing, N. Y.
Instructor in Organic Chemistry

Tutors

LOUIS H. LAUDY, Ph.D.....15 West 65th Street
Tutor in General Chemistry

JOSEPH STRUTHERS, Ph.D.....624 East 136th Street
Tutor in Metallurgy

JOSEPH C. PFISTER, A.M.....240 Sixth Avenue, Roseville, Newark, N. J.
Tutor in Mechanics

LEA MCILVAINE LUQUER, C.E., Ph.D...8 Pierrepont Street, Brooklyn, N. Y.
Tutor in Mineralogy

LOUIS MARIE AUGUSTE LOISEAUX, B.S.....639 Lexington Avenue
Tutor in the Romance Languages and Literatures

WILLIAM H. FREEDMAN, C.E., E.E.....157 West 119th Street
Tutor in Mechanics

ARTHUR HOLLICK, Ph.B.....New Brighton, N. Y.
Tutor in Geology

HERSCHEL C. PARKER, Ph.B.....21 Fort Greene Place, Brooklyn, N. Y.
Tutor in Physics

GARY N. CALKINS, B.S.....Hotel Beresford, 1 West 82d Street
Tutor in Zoölogy

* William T. Brewster, A.M.....143 West 64th Street
Tutor in Rhetoric

Ervin A. Tucker, M.D.....110 West 57th Street
Tutor in Obstetrics and Gynecology

Charles P. Warren, A.M.....19 West 34th Street
Tutor in Architectural Construction

Carlton Clarence Curtis, Ph.D....56 West 2d Street, Mt. Vernon, N. Y.
Tutor in Botany

Oliver S. Strong, Ph.D.....380 St. Nicholas Avenue
Tutor in Comparative Neurology and Assistant in Normal Histology of the Nervous System

Jonathan Brace Chittenden, Ph.D.....561 Fifth Avenue
Tutor in Mathematics

Herman Stearns Davis, Ph.D.....1744 Amsterdam Avenue
Tutor in Astronomy

Curtis Hidden Page, Ph.D.....128 West 103d Street
Tutor in the Romance Languages and Literatures

Charles C. Trowbridge, B.S.....7 East 46th Street
Tutor in Physics

George Clinton Densmore Odell, Ph.D.....112 West 81st Street
Tutor in Rhetoric

Harry Alonzo Cushing, Ph.D.....251 West 54th Street
Tutor in History

William Addison Hervey, A.M.....607 West 138th Street
Tutor in the Germanic Languages and Literatures

Reid Hunt, M.D., Ph.D.....121 West 61st Street
Tutor in Physiology

Adolph Black, C.E.....1434 Lexington Avenue
Tutor in Civil Engineering

* Herbert Maule Richards, S.D.....128 East 45th Street
Tutor in Botany

Samuel A. Tucker, Ph.B .....135 Madison Avenue
Tutor in Industrial Chemistry

Arthur Pine Van Gelder, Ph.B.....331 West 145th Street
Tutor in General Chemistry

Cassius Jackson Keyser, A.M.....751 Amsterdam Avenue
Tutor in Mathematics

Francis Pitt Smith, Ph.B.....Columbia University
Tutor in General Chemistry

Charles Norris, M.D.....437 West 59th Street
Tutor in Pathology

J. Livingston Rutgers Morgan, B.Sc., Ph.D.....New Brunswick, N. J
Tutor in Chemical Philosophy and Chemical Physics

* Absent on leave.

Assistants

HERBERT PERCY WHITLOCK, C.E. ..... 449 Park Avenue
Assistant in Mineralogy

HENRY SKILLMAN CURTIS, A.B. ..... Columbia University
Assistant in Physics

HERBERT TREADWELL WADE, A.B. ..... 149 East 46th Street
Assistant in Physics

PARKER CAIRNS MCILHINEY, Ph.D. ..... 320 St. Nicholas Avenue
Assistant in Metallurgy

ARTHUR MORGAN DAY, A.M. ..... Columbia University
Assistant in Political Economy and Social Science

NORMAN WILDE, Ph.D. ..... 80 Ludlow Street, Yonkers, N. Y.
Assistant in Philosophy

THOMAS H. HARRINGTON, C.E. ..... West Chester, N. Y.
Assistant in Mechanical Engineering

HENRY JAGOE BURCHELL, Jr., A.M. ..... 38 East 53d Street
Assistant in Latin

CHARLES KNAPP, Ph.D. ..... 1773 Sedgwick Avenue
Assistant in Latin

FREDERICK R. BAILEY, M.D. ..... 1165 East Jersey Street, Elizabeth, N. J.
Assistant in Normal Histology

RALPH CURTIS RINGWALT, A.B. ..... 112 West 81st Street
Assistant in Rhetoric

HENRY E. KEYES, Ph.D. ..... 74 West 46th Street
Assistant in Physics

JAMES DENNISON ROGERS, Ph.D. ..... 111 West 95th Street
Assistant in Greek

JOHN ANGUS MACVANNEL, A.M. ..... 601 Lexington Avenue
Assistant in Philosophy

JOHN HENRY LARKIN, M.D ..... 498 West 130th Street
Assistant in Pathology and Curator of the Museum

PHILIP HANSON HISS, Jr. ..... 437 West 59th Street
Assistant in Bacteriology

THEODORE GREELY WHITE, A.M. ..... 39 West 26th Street
Assistant in Physics

CHARLES DERLETH, Jr., B.S., C.E. ..... 674 East 135th Street
Assistant in Civil Engineering

GEORGE BALTHAZAR GERMANN, A.B., Pd.M. ..... 352 West 120th Street
Assistant in Mathematics

DANA CLEMNER WELLS, A.B., E.E. ..... 109 Willow Street, Brooklyn, N. Y.
Assistant in Physics

BEN M. JAQUISH, B.S. ..... 437 West 59th Street
Assistant in General Chemistry

GEORGE MÜLLER, Ph.B.....Columbia University
Assistant in Analytical Chemistry

CHARLES T. PARKER, M.D.....46 East 34th Street
Assistant in Operative Surgery

EDWARD H. L. MCGINNIS, M.D.....329 Amsterdam Avenue
Electro-Therapeutist

FLORA E. HARPHAM, A.M.....65 West 11th Street
Computor at the Observatory

CHARLES HERMAN FULTON.....229 Fifth Avenue, Brooklyn, N. Y.
Assistant in Analytical Chemistry

HENRY C. SHERMAN, Ph.D.....Columbia University
Assistant in Analytical Chemistry

SAMUEL SWAYZE SEWARD, Jr., A.M.....113 West 85th Street
Assistant in Literature

WILLIAM ROBERT WILLIAMS, M.D.....437 West 59th Street
Assistant in Normal Histology

FRANCIS CARTER WOOD, M.D.....437 West 59th Street
Assistant in Clinical Microscopy

PHILIP ERNEST BRODT, A.B.....758 West End Avenue
Assistant in Rhetoric

ALFRED LOUIS KROEBER, A.B.....316 West 89th Street
Assistant in Rhetoric

FRANK LEO TUFTS, A.M.....Columbia University
Assistant in Physics

SAMUEL GEORGE FITZHUGH TOWNSEND, A.B., E.E.....131 Fifth Avenue
Assistant in Electrical Engineering

FRANK C. HOOPER, Met.E.....Columbia University
Assistant in Mining

WILLIAM S. DAY, Ph.D.....203 West 85th Street
Assistant in Physics

JAMES HOWARD MCGREGOR, B.S., A.M.....388 St. Nicholas Avenue
Assistant in Zoölogy

SHEPHERD IVORY FRANZ, A.B.....62 Cottage Street, Jersey City, N. J.
Assistant in Psychology

HENRY F. HORNBOSTEL.....Flatlands, N. Y.
Assistant in Architecture

FREDERICK MONTGOMERY HOLBROOK, E.E.....645 Prospect Avenue
Assistant in Mechanical Engineering

FREDERICK SPALDING WARD, M.D.....437 West 59th Street
Assistant in Normal Histology

CAVALIER HARGRAVE JOÜET, Ph.D.....Roselle, N. J.
Assistant in Analytical Chemistry

FREDERIC HOOLE FLOY, A.B., M.D.....437 West 59th Street
Assistant in Normal Histology

WILLIAM FREDERICK NEUMANN, M.D.....437 West 59th Street
Assistant in Bacteriology

Curators

MAXIMILIAN K. KRESS, A.M.....248 West 42d Street
Curator and Lecturer in Architecture

GILBERT VAN INGEN.....244 East 50th Street
Curator of the Geological Collections

JOHN KUNKEL SMALL, Ph.D...The Elmer, Morningside Avenue, 121st Street
Curator of the Herbarium

Lecturers

WILLIAM ZEBINA RIPLEY, Ph.D., Mass. Institute of Technology, Boston, Mass.
Prize Lecturer in Physical Geography and Ethnology

GEORGE LOUIS BEER, A.M.....38 Manhattan Square, South
Lecturer in Mediæval History

REV. ABRAHAM YOHANNAN.....138 East 48th Street
Lecturer in Oriental Languages

EDMOND KELLY, A.M..... 107 East 60th Street
Lecturer on Municipal Government

HERBERT NOBLE, A.M., LL.B.....47 East 44th Street
Lecturer on Bailments, Domestic Relations, and Insurance

CHARLES AUGUSTUS STRONG, A.B.....Lakewood, N. J.
Lecturer in Psychology

FRANZ BOAS, Ph.D..... .....123 West 82d Street
Lecturer in Physical Anthropology

WILLIAM ROBERT SHEPHERD, Ph.D.....325 Macon Street, Brooklyn, N. Y.
Prize Lecturer in History

CHARLES T. TERRY, A.B., LL.B.....1 West 81st Street
Lecturer on Contracts

GEORGE JAMES BAYLES, Ph.D.....Orange, N. J.
Prize Lecturer on The Civil Aspects of Ecclesiastical Organizations

HENRY OSBORN TAYLOR, A.B., LL.B.....52 East 57th Street
Lecturer in Literature

WILLIAM T. PARTRIDGE.....Columbia University
Lecturer in Architecture

HENRY E. CRAMPTON, Jr., A.B.....Columbia University
Lecturer in Zoölogy

Clinical Assistants at the Vanderbilt Clinic

NAMES	DEPARTMENTS
JOHN ALDRICH, M.D.	Dermatology
CHARLES E. ATWOOD, M.D	Neurology

NAMES	DEPARTMENTS
Pearce Bailey, M.D.	Neurology
Donald M. Barstow, M.D.	Medicine
F. Bierhoff, M.D.	Diseases of Children
Edmund W. Bill, M.D.	Laryngology
A. B. Bonar, M.D.	Neurology
Arthur R. Braunlich, M.D.	Medicine
Walter B. Brouner, M.D.	Venereal Diseases
James H. Burtenshaw, M.D.	Gynecology
John Cabot, M.D.	Dermatology
Archibald Campbell, M.D.	Neurology
M. L. Carr, M.D.	Otology
Curtis B. Carter, M.D.	Ophthalmology
William H. Caswell, M.D.	Neurology
Christopher J. Colles, M.D.	Laryngology
Charles T. Dade, M.D.	Dermatology
Jonathan Dwight, Jr., M.D.	Laryngology
Leonard W. Ely, M.D.	Orthopædic Surgery, Laryngology
Albert W. Ferris, M.D.	Neurology
Edward M. Foote, M.D	Surgery
Richard Frothingham, M.D	Laryngology
Joseph E. Fuld, M.D.	Laryngology
Homer W. Gibney, M.D.	Orthopædic Surgery
William C. Gilley, M.D.	Venereal Diseases
S. P. Goodhart, M.D.	Neurology
J. A. Hartwell, M.D.	Surgery
Forbes Hawkes, M.D.	Surgery
Joseph J. Higgins, M.D.	Surgery and Gynecology
Edmond Y. Hill, M.D.	Venereal Diseases
Angier B. Hobbs, M.D.	Medicine
John H. P. Hodgson, M.D.	Dermatology
Ward A. Holden, M.D.	Ophthalmology
Joseph Huber, M.D.	Diseases of Children
John M. Kennedy, M.D.	Gynecology
Walter E. Lambert, M.D.	Otology
William G. Lyle, M.D.	Gynecology
James P. McEvoy, M.D.	Laryngology
Fred. S. McHale, M.D.	Diseases of Children
E. Pierre Mallett, M.D.	Gynecology
George H. Mallett, M.D	Gynecology
Louis Irving Mason, M.D.	Surgery
Jackson M. Mills, M.D.	Ophthalmology
Morton R. Peck, M.D.	Neurology
Charles I. Proben, M.D.	Gynecology
Charles R. L. Putnam, M.D.	Surgery
Charles C. Ransom, M.D.	Dermatology
C. C. Rathbone, M.D.	Venereal Diseases

NAMES	DEPARTMENTS
George A. Richards, M.D.	Laryngology
Arthur M. Shrady, M.D.	Medicine
Louis M. Silver, M.D.	Diseases of Children
William K. Simpson, M.D.	Laryngology
E. S. Steese, M.D.	Neurology
John B. Stein, M.D.	Venereal Diseases
Benjamin W. Stiefel, M.D.	Gynecology
L. Stieglitz, M.D.	Neurology
Albert E. Sumner, M.D.	Medicine
Allan G. Terrell, M.D.	Otology
Benjamin T. Tilton, M.D.	Gynecology and Surgery
W. D. Trenwith, M.D.	Venereal Diseases
Henry H. Tyson, M.D.	Ophthalmology
Arthur S. Vosburgh, M.D.	Gynecology and Surgery
B. H. Waters, M.D.	Surgery
Edward L. Williamson, M.D.	Venereal Diseases
J. V. D. Young, M.D.	Gynecology

Emeritus Officers

* Henry Drisler, LL.D. ..... 48 West 46th Street
Emeritus Professor of the Greek Language and Literature

Thomas Egleston, E.M., Ph.D., LL.D. ..... 35 Washington Square
Emeritus Professor of Mineralogy and Metallurgy

Rev. Cornelius R. Duffie, S.T.D. ..... 263 Lexington Avenue
Chaplain Emeritus

Thomas M. Markoe, M.D. ..... 500 Madison Avenue
Emeritus Professor of Surgery

T. Gaillard Thomas, M.D. ..... 600 Madison Avenue
Emeritus Professor of Obstetrics and Gynecology

John T. Metcalfe, M.D. ..... Cold Spring, N. Y.
Emeritus Professor of Clinical Medicine

Edward Curtis, M.D. ..... 120 Broadway
Emeritus Professor of Materia Medica and Therapeutics

Fessenden N. Otis, M.D. ..... 5 West 50th Street
Emeritus Professor of Genito-Urinary Diseases

John D. Quackenbos, A.M., M.D. ..... 331 West 28th Street
Emeritus Professor of Rhetoric

Nathaniel Lord Britton, Ph.D. ..... New York Botanical Garden
Emeritus Professor of Botany

* Deceased.

Columbia University in the City of New York

GENERAL STATEMENT

COLUMBIA COLLEGE IN THE CITY OF NEW YORK is the legal designation of the institution founded in 1754 as King's College by the grant of a royal charter from George II. The title of the corporation, originally the Governors of the College of the Province of New York, is now the Trustees of Columbia College in the City of New York.

On February 3, 1896, the Trustees adopted the following resolution: *Resolved*, That in all official publications hereafter issued by or under authority of the Trustees, all the departments of instruction and research maintained and managed by this corporation may, for convenience, be designated collectively as "Columbia University in the City of New York," or "the University," and the School of Arts, the same now known and described, may hereafter be designated as "Columbia College," or "the College."

Columbia University is governed primarily by twenty-four trustees whose term of office is for life and who form a self-perpetuating body. The title to all the property of Columbia University is vested in the Trustees, who also appoint the President and all officers of instruction and administration. The Trustees are the ultimate source of authority in all matters pertaining to the University.

The President has charge of the educational administration of the University, and is the chairman of the University Council and of every faculty established by the Trustees.

The University Council is a body consisting of the President, the Dean, and Secretary of the College *ex-officio*, and the Dean and one elected member from each of the faculties of the University. The University Council, subject to the reserved power of control by the Trustees, has charge of the general educational interests of the University and of all matters affecting more than one faculty.

Columbia University, speaking pedagogically, is now both a college and a university. The college is known as Columbia College. It offers a course of four years' duration in the liberal arts and sciences, leading to the degree of bachelor of arts, which is conferred on the recommendation of the Faculty of the College.

The University consists of the following faculties: Law, Medicine, Philosophy, Political Science, Pure Science, and Applied Science. These faculties have charge of all the graduate work, besides the professional instruction in law, medicine, and applied science. The faculties are administrative divisions

of the teaching body made in accordance with the natural affiliations of the subjects taught. The schools under their charge form convenient groupings of students. Each school bears the name of its faculty, except that the school conducted by the medical faculty is known as the College of Physicians and Surgeons, and the Schools of Mines, Chemistry, Engineering, and Architecture are under the charge of the one Faculty of Applied Science.

These divisions into faculties and schools neither control nor limit the student in his freedom of selecting under one or several of the faculties courses that lead to the university degrees of master of arts and doctor of philosophy. The degree of master of laws is also a university degree, but for this degree the choice of the student is restricted to subjects under the two faculties of Law and Political Science. All of these degrees are granted on the recommendation of the University Council.

The professional degrees are bachelor of laws, doctor of medicine, bachelor of science, engineer of mines, civil engineer, metallurgical engineer, mechanical engineer, and electrical engineer. These are conferred on the recommendation of the Faculties of Law, Medicine, and Applied Science, respectively.

The degrees of doctor of laws, doctor of sacred theology, and doctor of letters are conferred *honoris causa* by the Trustees at their discretion.

The City of New York is full of opportunities that may be availed of by advanced students. In particular, by special arrangements, peculiar privileges have been obtained for students of Columbia University, free from additional charge, in the Union Theological Seminary, the Metropolitan Museum of Art, the American Museum of Natural History, and the Teachers College.

The principal administrative officers, other than the President, are the Deans of the several faculties, the Secretary of the University, the Librarian, the Bursar, and the Superintendent of Buildings and Grounds.

In the following pages will be found a statement of the method of entering the University, the cost of tuition, the endowments for the benefit of students, and the special privileges open to them in affiliated institutions.

The scope of instruction given in Columbia University is indicated broadly by the statements of the departments of instruction, in connection with each of which are stated in detail the courses offered for the current academic year, together with a brief summary of the equipment of the department for the work it undertakes to do.

Following these details will be found the requirements for the university degrees, the organization of the several schools, together with the requirements for the various degrees under the control of separate schools, the publications of the University, degrees conferred, the lists of fellows, scholars, and honor men, the directory of students, statements concerning Barnard College and the Teachers College, and the calendar for the academic year.

The work of the University was begun on the new site, October 4, 1897.

METHOD OF ENTERING THE UNIVERSITY

Students entering the University for the first time must pay a matriculation fee of $5, and if an examination for entrance is required, such fee is payable

before examination. All such students, after filling in the blank provided for the purpose by the dean of the proper faculty, and obtaining the signature of the dean thereto, are required to present the same to the Bursar with the proper fee. Students intending to pursue a partial course must secure from the dean of the proper faculty a certificate of the exact fee to be paid.

No student is permitted to attend any academic exercise until he has complied with the regulations in regard to matriculation and registration.

Students entering the Medical School may pay their fees and register at the College of Physicians and Surgeons, 437 West 59th Street.

Certain courses of lectures are open to the public, men and women alike, on payment of an auditor's fee. No auditor will be admitted to any course without the consent of the instructor, previously obtained; auditor's tickets must be procured from the Bursar of the University, and shown to the instructors in in charge of the courses for which they are issued.

All communications for the President must be addressed to him at the University.

For catalogue, circulars and detailed information, address the Secretary of the University.

The catalogue is published in December and is sold at twenty-five cents a copy.

The circulars of the various schools and departments are issued in the early spring and are distributed upon application.

FEES

The regulations in regard to fees are as follows:

For Matriculation		$ 5
For Tuition:		
For candidates for a degree.		
* In the College	per annum	150
In the School of Law	"	150
In the College of Physicians and Surgeons	"	200
In the Schools of Mines, Chemistry, Engineering, and Architecture	"	200
In the School of Political Science	"	150
In the School of Philosophy	"	150
In the School of Pure Science	"	200
For candidates for the degree of master of arts and doctor of philosophy	"	150

Matriculation Fee

Tuition Fees

The maximum fee for the degrees of master of arts and doctor of philosophy is respectively $150 and $300.

For students pursuing partial courses, at the rate of $15 per annum for each hour of attendance per week on lectures or recitations, with a maximum fee of 150

* Seniors taking the first year in the Medical School or the Schools of Applied Science pay the fee required in those schools, $200.

For auditors,
at the rate of $20 per annum for each hour of attendance per week on lectures or recitations, with a maximum fee of . . . . $ 200

For Examinations :

Examination Fees

For examinations at unusual times	5
For the bachelor's degree (not professional or technical)	15
For any professional or technical degree	25
For the degree of master of arts	25
For the degree of doctor of philosophy	35

Special Fees :

In the College of Physicians and Surgeons.

Special Fees

Dissecting material, per "part"	1

For special students :

Didactic lectures from each of the six chairs of Anatomy ; Materia Medica and Therapeutics ; Obstetrics and Gynecology ; Physiology ; Practice of Medicine and Neurology ; Surgery	20
Dissection	10
Laboratory course in normal histology, including materials	25
Laboratory course in pathology and pathological histology, including materials	25
Laboratory fee for special instruction in pathology, histology, or bacteriology, per month	25
Operative surgery on the cadaver, including material, per course	20

For other special courses the fees must be specially arranged for with the instructors.

The clinical lectures at the Vanderbilt Clinic are free to matriculates who do not take the regular curriculum.

The public clinical lectures, and demonstrations of pathological anatomy, which are given at the hospitals by officers of the College, are free to matriculates.

In the Schools of Mines, Chemistry, Engineering, and Architecture.

For graduate students :

For the use of the cabinets only	25
For the use of the drawing academy only	25
For the use of the laboratories or either of them	50
For candidates for admission to advanced standing who attend the Summer School in Surveying	35

The President and Treasurer are authorized to determine the fees to be paid in special cases, for partial attendance, upon the basis of the fees hereinbefore specified.

Payment of Fees

The matriculation fee shall be paid before the entrance examination. Examination fees shall be paid in all cases before examination.

Annual tuition fees may be paid in equal installments at the beginning of each session of the academic year, except that in the case of students in the

College of Physicians and Surgeons such fees shall be paid in full at the beginning of the academic year, and except that whenever the total amount of a student's tuition fees shall not exceed one hundred dollars, the full amount shall be paid at the beginning of the academic year or at entrance.

No candidate for a degree in any school shall be entitled to receive the same until he shall have discharged all his dues to the University.

Free and Reduced Tuition

Free or reduced tuition may be granted in the College and in the Schools of Law, Mines, Chemistry, Engineering, and Architecture, in special cases on the ground of character, ability, and need combined, but no reduced fee shall be less than fifty per cent. of the statutory charge, and the total number of students receiving free or reduced tuition under any faculty shall not exceed ten per cent. of the total number of students registered with such faculty. No free or reduced tuition shall be granted to any student during the first year of his connection with the University.

Fellows shall be exempt from the payment of all fees.

Fellows Free Students

Free students and students granted a reduction of tuition fees shall not be exempt from the payment of fees for matriculation, for extra examination, and for examination for a degree.

Withdrawal

Students are requested, in case of withdrawal from the University during the academic year, to notify the Bursar.

Comparative Statement of Students' Expenses for the Academic Year, October to June

BASED ON STUDENTS' STATEMENTS

	Low	Average	Liberal
Matriculation Fee (First Year)	$ 5	$ 5	$ 5
Tuition	150	150	150
Books	15	30	40 up
College Incidentals	—	15	50 "
Room (32 weeks)	80	128	224 "
Board (32 weeks)	80	128	256 "
Clothes and Washing	35	75	125 "
All other Expenses	15	25	50 "
Total	380	556	900 up

In the case of students in the Schools of Medicine, Applied Science, and Pure Science, $50 for tuition should be added, the fee in those schools being $200.

Committee on Aid for Students

The University Council has constituted a Standing Committee on Aid for Students, consisting at present of the following members:

Professor J. F. KEMP (School of Pure Science), Chairman.
" T. S. FISKE (College).
" G. S. HUNTINGTON (School of Medicine).
" F. M. BURDICK (School of Law).
" F. R. HUTTON (Schools of Applied Science).
" F. H. GIDDINGS (School of Political Science).
" H. A. TODD (School of Philosophy).

It is the design of the Committee to put students, desiring to work their way through college, especially those coming from elsewhere than New York or the immediate vicinity, in the way of earning enough for their partial or complete support, or if possible to extend assistance to them in other ways, while they are pursuing their studies here. It is believed that many opportunities may be offered to students of this class if the fact of their desire to obtain employment is made known. Some of the openings likely to be available are: private tutoring, translating, copying of various sorts, teaching in evening schools, travelling companions, stenography, and typewriting. All communications should be addressed to the Committee.

All the heads of clinics in the Medical School have consented to give advice without charge to students who present cards of introduction from the Committee. Such visitors are received as a general rule during office hours at private offices. This insures to students who need it, the best medical advice in the city.

FELLOWSHIPS, SCHOLARSHIPS, AND OTHER PROVISION FOR THE ASSISTANCE OF STUDENTS

University Fellowships

Twenty-four fellowships, known as "University Fellowships," each of the value of five hundred dollars a year, are awarded by the Council, to those applicants who give evidence of special fitness to pursue courses of higher study and original investigation, the competition to be open to graduates of all colleges and scientific schools. Vacancies occurring in any such fellowships shall be filled in the same manner in which original appointments are made.

Additional university fellows may be appointed in cases where the original appointee waives the emolument of the fellowship while accepting the honor of the appointment, and in cases where a university fellow desires reappointment without emolument.

University Fellowship Regulations

The application shall be made prior to March 1st, in writing, addressed to the President of Columbia University. Applications received later than March 1st may fail of consideration. The term of the fellowship is one year, dating from July 1st. Residence should begin October 1st.

The candidate must give evidence

(*a*) of a liberal education, such as a diploma already granted, or about to be received, from a college or scientific school of good repute;

(*b*) of decided fitness for a special line of study, such as an example of some scientific or literary work already performed ;

(*c*) of upright character, such as a testimonial from some instructor.

The value of each fellowship is five hundred dollars. Payments will be based on the time during which the fellow shall have been in residence, and are made in quarterly installments, beginning November 30th. The holder of a fellowship is exempt from the charges for tuition.

Every holder of a fellowship will be expected to perform such duties as may be allotted to him in connection with his course of study, which course shall be such as to lead to the degree of doctor of philosophy. He will be expected to devote his time to the prosecution of special studies under the direction of the head of the department to which he belongs, and before the close of the academic year to give evidence of progress by the preparation of a thesis, the completion of a research, the delivery of a lecture, or by some other method. He must reside in New York or vicinity during the academic year.

No holder of a fellowship shall be permitted to pursue a professional or technical course of study during his term. With the written approval of the President, but not otherwise, he may give instruction or assistance in any department of the University.

A fellow may be reappointed at the end of a year for reasons of weight. No fellow may be reappointed for more than two terms of one year each.

As these fellowships are awarded as honors, those who are disposed, for the benefit of others or for any other reason, to waive the pecuniary emoluments, may do so, and still have their names retained on the list of fellows.

Tyndall Fellowship

A fellowship known as the "John Tyndall Fellowship for the encouragement of Research in Physics" is held by some suitable person, who is either a graduate of or a student in the University, but not necessarily, a candidate for a degree. Such fellow shall be appointed by the Council upon the recommendation of the head of the department of Physics. Such appointments shall always be for the term of one year only, but the fellow, for the time being, shall be eligible for appointment from year to year, upon like recommendation. The fellow so appointed shall be entitled to receive during his term of office the net income of the capital sum constituting the endowment, to be paid in four quarterly installments on the usual quarter days, upon the certificate of the President ; and the Trustees guarantee that such net income will amount to at least six hundred and forty-eight dollars a year, being six per cent. upon ten thousand eight hundred dollars, the fund presented to the University by Professor Tyndall.

Barnard Fellowship

A fellowship known as the "Barnard Fellowship for Encouraging Scientific Research" is held by a graduate of the College or of the Schools of Mines, Chemistry, Engineering, and Architecture, who has evinced decided aptness for physical investigation and who may be disposed to devote himself to such investigation for some years continuously. Such fellow shall be appointed by the Council upon the joint recommendation of the faculties of the College and Applied Science. Such appointment shall be for the term of one year only, but the fellow, for the time being, shall be eligible to reappointment from year to year upon like joint recommendation. The fellow so appointed shall be en-

titled to receive during his term of office the net income of the capital sum constituting the endowment, to be paid to him in four equal quarterly installments on the usual quarter days, upon the certificate of the President.

uties of yndall and arnard ellows

It shall be the duty of a Barnard or John Tyndall fellow to devote himself faithfully to the investigation of some subject in physical science at this University, or at some other in this country or abroad, under the supervision of some known physicist approved by the President and the head of the department of Physics. He shall make a report quarterly to the President, giving an account of the work in which he has been engaged during the three months preceding; which report shall be certified by the physicist superintending and directing him. In case of failure faithfully to fulfil the obligations imposed upon him, such fellow shall forfeit all privileges and emoluments conferred upon him by his appointment to the fellowship, and the Council may at any time declare the fellowship to be vacant.

risler ellowship

A fellowship known as the "Henry Drisler Fellowship in Classical Philology," of the annual value of five hundred dollars, was established in 1894 in commemoration of the semi-centennial in the service of the University of Henry Drisler, LL.D., of the class of 1839, who held in the University the chairs of both Latin and Greek.

Applicants for this fellowship must be bachelors of arts of this University, or some other college or university of equivalent standing, and must have pursued the study of Greek and Latin throughout their undergraduate course. They must present testimonials from their instructors in Greek and Latin as to their zeal and success in the study of these languages, and must give evidence of fitness for a wider and more profound study of the same, and for independent research. Such evidence may be shown by the results of a special examination, or by the production of an essay or published treatise in some department of classical study. Applicants must also have a sufficient knowledge of French and German to use those languages readily in the prosecution of their studies, and must present a certificate of good moral character.

The appointment to the fellowship will be made by the University Council on the joint recommendation of the professors of Greek and Latin. The appointment shall be for one year, and the holder, for reasons of weight, may be reappointed; but the fellowship shall not be held by the same person for more than three years.

The fellow must study at this University under the direction of the professors of Greek and Latin, unless permitted by the Council to spend a year in some foreign university or in the American School of Classical Studies at Athens.

nnual ellows

The Treasurer may receive gifts of money for fellowships to run for one year or more, provided that no fellowship shall be created for less than five hundred dollars per annum. Such fellowship shall be filled by the University Council, and shall be subject to such rules and regulations not inconsistent with the Statutes, as may be prescribed by the Council.

lass of '70 ellowship

There is a fellowship known as the "Class of '70 Fellowship," of the annual value of five hundred dollars, which, after the expiration of the term of the present incumbent, shall be filled by the Council, and shall be subject to such rules and regulations not inconsistent with the Statutes, as may be prescribed by the Council.

University Scholarships

Thirty university scholarships are awarded annually to students in the Faculties of Political Science, Philosophy, and Pure Science. These scholarships are awarded under the following regulations, prepared by the authority of the University Council and with its approval :

1. The university scholarships are open to all graduates of colleges and scientific schools whose course of study has been such as to entitle them to be enrolled at Columbia as candidates for a university degree.

2. These scholarships are tenable for one academic year, with a possibility of renewal for one year longer. They are of an annual value of one hundred and fifty dollars each.

3. Payments will be made to university scholars in two equal installments; one on October first and one on February first. University scholars will be required to pay all of the fees established for matriculation, tuition, and graduation.

4. Applications for university scholarships should be made in writing, on blanks that will be furnished for the purpose, and addressed to the President of Columbia University. Applications must be filed not later than May 1. Should an unsuccessful applicant for a fellowship apply for a scholarship, the only information required from him will be that contained in the formal application for the fellowship.

5. The university scholarships will be awarded by the University Council at its regular meeting in May. The award will be made after applications have been examined and recommendations made by the Standing Committee on university fellowships. In making these recommendations the committee will give preference to those candidates for university fellowships who have failed of appointment by the University Council after having been recommended for the same by any faculty or department.

6. University scholars will be required to enroll themselves as candidates for a degree and to pursue a regular course of study leading thereto.

President's University Scholarships

In addition to the university scholarships, during the present academic year there are four scholarships ; from and after July 1, 1898, there will be six scholarships ; and from and after July 1, 1899, eight scholarships, each of the annual value of one hundred and fifty dollars, which shall be known as the "President's University Scholarships." Such scholarships, which shall be for the term of one year, shall be filled by the University Council, and shall be governed in all respects by the regulations attached to the university scholarships established by the preceding section, and by such further regulations as may from time to time be hereafter adopted by the Trustees. The holders of such scholarships may be reappointed upon the expiration of their terms upon such conditions as may be prescribed in the regulations. In case any one of said scholarships is not awarded in any year, or in case any scholarship shall become vacant otherwise than by the graduation of the incumbent, an additional scholar may be appointed to fill such vacancy. The recipient of any such scholarship may, with the consent of the President, assign the income thereof to any properly qualified candidate without waiving his right to be designated as a President's University Scholar.

The National Society of the Sons of the American Revolution offers a silver medal under the following regulations :

Sons of the American Revolution Medal

1. Competition shall be open to members of the senior class in the College, and to first-year students, not graduates of the College, studying under any of the faculties of the University.

2. Each essay must contain not less than 1600 and not more than 2000 words and shall be upon the subject: "The Principles fought for in the War of the Revolution."

3. A typewritten copy of each essay must be presented to the President not later than May 1.

4. The Committee of Award shall consist of the professors giving instruction in American History.

5. The prize shall in no case be awarded to an essay defective in English composition.

The award, if made, will be announced by the President at commencement.

A similar tender has been made to the principal colleges of the country, and the essays receiving the silver medals will be submitted to a Committee of the National Society in competition for a gold medal to be awarded to the writer of the essay deemed most meritorious.

Bunner Medal

The H. C. Bunner Gold Medal, provided for by the interest upon a fund of one thousand dollars, established in November, 1896, by the friends of the late Henry Cuyler Bunner, is awarded annually at commencement to the candidate for a Columbia degree who shall present the best essay on an assigned subject in American Literature. Essays must be submitted to the President on or before May 1. The award will be made by a committee from the division of English and Literature, to be appointed by the President. The subject for the essay to be handed in May 1, 1898, is "The Literary Influences which Effected both Hawthorne and Poe"; for 1899, "Daniel Webster as an Orator."

The College

Alumni Scholarships

The Alumni Association of Columbia College is entitled to have always, in the College, four students to be instructed free of charge.

Religion and Learning Scholarships

The Society for Promoting Religion and Learning in the State of New York is entitled to have always, in the College, two students in each class, to be instructed free of charge.

Faculty Scholarships

The members of the several faculties are entitled to have their sons educated in the College free of charge.

Alumni Competitive Scholarships

There is offered annually, as a prize to the student passing the best entrance examination in the College, a free scholarship for the course of four years. Such scholarship is known as the "Alumni Competitive Scholarship," and the faculty have power to fix the conditions under which such scholarship is awarded.

Moffat Scholarships

The personal representatives of the late William B. Moffat, M.D., and their assigns are entitled to nominate and have always two students in the College to be instructed free of charge; such scholarships are known as the "Moffat Scholarships."

Schermerhorn Scholarships

The nearest living male relative of the late John Jones Schermerhorn is entitled to nominate and have always five students in the College to be instructed

free of charge ; such scholarships are known as the "Schermerhorn Scholarships."

Theological Seminary Scholarships

The scholarship in the General Theological Seminary of the Protestant Episcopal Church (heretofore placed at the disposal of the Trustees of Columbia University by the Society for Promoting Religion and Learning in the State of New York) is awarded upon the following conditions, to wit :

a. All candidates shall comply with the requirements for admission of the General Theological Seminary, and as candidates for the ministry of the Protestant Episcopal Church, and must have taken the degree of bachelor of arts and have been graduated with honors.

b. All candidates shall report themselves to the Educational Committee of such Society at least three months previous to the examination to be held by the faculty for the purpose of awarding such scholarship.

Brooklyn Scholarships

Twelve scholarships, founded by the Trustees in 1895 in recognition of the gift to the University by President Low of a memorial building for the university library, are open for competition to candidates for admission to the College who are residents of Brooklyn, N. Y., and have received their training in either the public or the private schools of that city. Three of these scholarships are awarded annually, to the three qualified competitors who are examined at the College in June and pass complete entrance examinations in all subjects. The papers of the competitors who pass without conditions will be examined by the Committee of the Faculty on Entrance Examinations ; and the three students whose papers as a whole are entitled to the highest rank will receive the scholarships.

Each scholarship entitles its holder to receive the sum of $150 per annum during the college course ; but if he fail to maintain a standing of at least grade C in all of the courses pursued by him, or if he commit any breach of good order, he shall forfeit the scholarship.

Should any recipient desire, he may, with the consent of the faculty, while still retaining the title "Brooklyn Scholar," transfer to any other properly qualified candidate from Brooklyn the income from the scholarship ; and such action on his part will not be made a matter of public record.

All persons intending to compete for these scholarships must submit satisfactory certificates of character and proficiency from the schools which they have last attended, and must state in writing that it is their intention to spend at least one year at Columbia College.

Stuart Scholarships

There are two scholarships in the College known as the "Stuart Scholarships," in memory of Sidney Barculo Stuart, Class of '80, Columbia College, and Eugene Talman Stuart, Class of '81, Columbia College ; founded by their grandmother, Cornelia A. Atwill, October, 1895 ; and the said Cornelia A. Atwill shall have the privilege of nominating the incumbents for such scholarships during her lifetime, and after her decease such nominations shall be made by the President of the University and the Dean of the College on such terms and conditions as they may from time to time impose.

Prize of the Alumni Association

A prize of fifty dollars in money or its equivalent, at the option of the receiver, established by the Association of the Alumni of Columbia College, was first awarded at the commencement in June, 1858.

It is to be given "to the most faithful and deserving student of the graduating class."

Three names are selected by the faculty and submitted to the class, who from these three designate one to receive the prize. Should the class at any time fail to make the selection, and give notice thereof to the President of the University at least ten days prior to the day appointed for commencement, the selection of the student to receive the prize may be made by the faculty.

McVickar Prizes

Two Annual Seminary Prizes were founded in November, 1851, by the Rev. Dr. John McVickar, through the Society for Promoting Religion and Learning, and for which an endowment of $1000 is provided on the following conditions:

1. The first, to be entitled "The Society's Greek Seminary Prize of Thirty Dollars," to be annually competed for among such members of the graduating class as shall have given in their names to the President, at least one month previous to such competition, as candidates for the General Theological Seminary of the Protestant Episcopal Church, each student giving in his name as competitor to designate the prize for which he contends, and to be confined to the choice then made. The examination for such prize to be held publicly in the chapel, and separate from the general examination. To be on:

a. The Epistles of the New Testament (in Greek) "ad aperturam libri."

b. On some one of the early Greek Fathers, to be designated at the time of noticing the prize, or, if none be designated, then upon some portion of Chrysostom or Athanasius, at the choice of the student.

The decision to be with the President and the professor of Greek.

2. The second, to be entitled "The Society's English Seminary Prize of Twenty Dollars," to be annually competed for as before, and to consist in the production of an essay (to be publicly read or not, as the President may determine), of the ordinary length of a pulpit discourse, on some subject connected with the course of evidences on which the class has been engaged; such subject to be selected by the professor of the evidences, and given out by him at the time of notice; and the prize to be adjudged as before, by the President and the professor of that branch; such decision to have respect to

a. The general ability and soundness of the essay;

b. Its logical and demonstrative form; and

c. The pure Saxon style and idiom in which it is written.

The names of the successful candidates to be enrolled in a suitable book to be provided for that purpose, lettered appropriately, and kept on the library table; to be announced with other honors on commencement day, and also recorded honorably in the Society's books.

Chanler Historical Prize

In 1877, Mr. J. Winthrop Chanler, an alumnus of the College of the Class of 1847, bequeathed "to the Trustees of Columbia College in the City of New York the sum of one thousand dollars, to be invested and kept invested, and the income thereof to be given annually, on commencement day, to the undergraduate member of the senior class of said College who shall be the author of the best original manuscript essay in English prose on the history of civil government in America, or some other historical subject, the same to be determined by the judgment and decision of the faculty of said College." The bequest became available in 1879.

The subject for the present year is "The Career of Thomas Hutchinson as Governor of the Province of Massachusetts." The competitive essays must be handed to the President on or before May 1.

College of Physicians and Surgeons

Fellowships of the Alumni Association

In June, 1891, the Trustees, at the request of the Alumni Association of the College of Physicians and Surgeons, established three fellowships to be known as the Fellowships of the Alumni Association of the College of Physicians and Surgeons, the provision for which is made annually by the Association.

These fellowships are open to graduates of the College of Physicians and Surgeons who have shown special aptitude for scientific research in the departments of Anatomy, Physiology, or Pathology. They are held for a period of two years and have an annual value of five hundred dollars each. The appointments to these fellowships are made by the Executive Committee of the Alumni Association from candidates presented to them by the professor of Anatomy, the professor of Physiology, and the professor of Pathology.

The persons appointed to these fellowships are expected to devote themselves to scientific research in the department which they may elect, in this country, either in the schools of Columbia University, where they enjoy free tuition and the privileges of the laboratories, or in other institutions at their own expense. At the end of two years the holders of these fellowships are expected to present to the Association a thesis containing evidence of independent or original work in their special department.

Alonzo Clark Scholarship

By the will of the late Alonzo Clark, M.D., LL.D., for many years President of the College of Physicians and Surgeons, and Professor of Pathology and Practical Medicine, it has been placed in the power of the Medical Faculty to bestow a scholarship, with an income of about seven hundred dollars a year, for the purpose of promoting the discovery of new facts in medical science.

Harsen Prizes for Clinical Reports

Three annual prizes, founded in 1859, by the late Jacob Harsen, M.D., a graduate of the College of Physicians and Surgeons, are offered for the three best reports, in writing, by students of the Medical School, of the clinical instruction given at the New York Hospital during any four consecutive months of the year which ends on commencement day.

These reports must embrace the clinical teaching of both the visiting physician and the visiting surgeon on duty.

Each report must be designated by a device or motto, and must be accompanied by a sealed envelope, bearing the same device or motto, and containing the name and address of the author.

The prizes are as follows:

A first prize of one hundred and fifty dollars: a second prize of seventy-five dollars; a third prize of twenty-five dollars.

A "Harsen Prize Medal" and a diploma are given with each prize.

Harsen Prizes for Proficiency at Examination

In consequence of the great increase in value of the Harsen Prize Fund, in addition to the three prizes above mentioned, there are awarded three Harsen prizes for proficiency at examination, viz.:

A first prize of five hundred dollars; a second prize of three hundred dollars; a third prize of two hundred dollars.

The award of these prizes is made as follows:

The ten members of each graduating class who, at their examination for the degree of doctor of medicine, have shown the highest proficiency in all the branches combined, receive each a diploma of "Examination Honors," and are entitled to take part in special competitive examinations, the three most meritorious competitors at which receive the first, second, and third prizes respectively.

The competitive examinations consist:

1. Of an examination in writing, covering *all the branches* of medical teaching.

2. Of an examination upon the cadaver in *practical anatomy*, conducted by the professor of Anatomy.

3. Of practical examinations in *clinical medicine* and *clinical surgery*, conducted at the hospitals by the professors of Medicine and Surgery, respectively.

The relative merits of the competitors are decided, and the award of the prizes made, by a committee of three judges, consisting of the Dean of the College of Physicians and Surgeons, the President of the Association of the Alumni of the same, and a resident alumnus selected by them.

Alumni Association Prize

The Alumni Association Prize is a biennial prize of five hundred dollars open for competition to the alumni of the College of Physicians and Surgeons. It is awarded for the best medical essay submitted upon any subject the writer may select, and is open to competition in alternate years with the Cartwright Prize.

If no one of the competing essays be deemed sufficiently meritorious, the prize is not awarded.

An essay in order to be held worthy of the prize must contain the result of original investigation made by the writer.

This prize is not awarded to any essay which is the work of more than one author, or which is at the same time submitted for another prize. Each competitor is required to send with his essay to the Prize Committee a statement that these requirements have been complied with.

Essays in competition for the prize to be awarded at commencement, 1898, must be sent to the Secretary of the Alumni Association of the College of Physicians and Surgeons on or before April 1, 1898.

Competing essays must each be marked with a device or motto, and accompanied by a sealed envelope, similarly marked, containing the name and address of the author.

Cartwright Prize of the Alumni Association

The Cartwright Prize consists of five hundred dollars, and is offered for competition in alternate years with the Alumni Association Prize.

It is awarded on the same terms as the latter, *except that it is open to universal competition*. Essays in competition for the prize to be awarded at commencement, 1899, must be sent to the Secretary of the Alumni Association on or before April 1, 1899.

Stevens Triennial Prize

The Stevens Triennial Prize was established by the late Alexander Hodgdon Stevens, M.D., formerly President of the Medical School, on the following plan:

The prize, awarded triennially, consists of the interest yielded by the principal fund during three years, and amounts to two hundred dollars.

The administration of the prize is entrusted to a commission, consisting of the Dean of the Medical Faculty (*ex-officio*), the president of the Alumni Associan of the College of Physicians and Surgeons (*ex-officio*), and the professor of Physiology (*ex-officio*) in the same institution.

The prize is awarded to no essay unless it is sufficiently meritorious and includes the results of original research by the writer upon the subject chosen.

The competing essays must be sent in to the Dean of the College of Physicians and Surgeons, on or before the first day of January, 1900. Each essay must be designated by a device or motto, and must be accompanied by a sealed envelope, bearing the same device or motto, and containing the name and address of the author. The envelope belonging to the successful essay will be opened, and the name of the author announced, at the annual commencement of the University in 1900.

The prize is open for universal competition.

Joseph Mather Smith Prize

The fund for the Joseph Mather Smith Prize was given by the relatives, friends, and pupils of the late Dr. Smith, as a memorial of his services as professor in the College of Physicians and Surgeons from 1826 to 1866. Under the provisions of the trust, an annual prize of one hundred dollars is awarded for the best essay (if sufficiently meritorious) on the subject of the year, presented by an alumnus of the College of Physicians and Surgeons. The competing essays should be sent to the Dean of the Medical Faculty on or before March 10th, each essay signed with a device or motto, and accompanied by a sealed envelope, inscribed with the same device or motto, and containing the name of the author. The envelope of the successful essayist will be opened, and the prize awarded at the annual commencement next following.

School of Architecture

Columbia Fellowship

A fellowship known as the "Columbia Fellowship in Architecture," open to all graduates of the School of Architecture less than thirty years of age, is awarded under such rules and regulations as shall from time to time be determined by the President and the professor of Architecture. Holders of such fellowship shall devote the income thereof to foreign study and travel in accordance with plans prepared by themselves and approved by the President and such professor, and shall upon return present a written report and exhibit drawings in the School of Architecture. Said fellowship shall be awarded in the spring of every even-numbered year, and payments thereof shall be made by the Treasurer, on the certificate of the professor of Architecture, endorsed by the President, in four equal installments of three hundred and twenty-five dollars each on the usual quarter days.

McKim Fellowships

Two fellowships, known as the "McKim Fellowships in Architecture," are awarded upon like conditions and for like purposes as are specified in the foregoing section, but such fellowships shall be awarded in the spring of every uneven-numbered year, and payments thereof shall be made by the Treasurer, on the certificate of the professor of Architecture, endorsed by the President, in four equal installments of two hundred and fifty dollars each on the usual quarter days.

School of Political Science

Prize in Political Economy

An annual prize of one hundred and fifty dollars for the best essay on some subject in political economy has been established by Mr. Edwin R. A. Seligman, of the class of 1879. Competition for the prize is open to all members of the School of Political Science. The topic selected must be approved by the faculty and the essay itself must not be less than twenty thousand words in length.

Bennett Prize

A prize of forty dollars, to be given on commencement day, has been established by Mr. James Gordon Bennett. The prize is awarded by the Faculty of Political Science for the best essay in English prose upon some subject of contemporaneous interest in the domestic or foreign policy of the United States, the subject for the present year being "The Future Policy of the United States in regard to Governmental Paper Currency." The competition is open to seniors in the College, whether regular or special students, and to all students under any of the faculties of the University, who have not yet taken the baccalaureate degree in arts, letters, or philosophy, provided that they take courses amounting to six hours a week throughout the year in the School of Political Science. Essays must be submitted to the President on or before May 1. If no satisfactory essay is received no award will be made. No award will be made for any essay that is defective in English composition.

Toppan Prize

A prize known as the Robert N. Toppan prize, of one hundred and fifty dollars, is awarded annually to the member of the School of Political Science who shall pass the best written examination upon a paper prepared by the professor in charge of the department of Constitutional Law.

Prize Lectureships

The Trustees have established in the School of Political Science three prize lectureships of the annual value of five hundred dollars each, tenable for three years. The power of appointment is vested in the faculty. One of these three lectureships becomes vacant at the close of each academic year. The previous holder may be reappointed. The conditions of competition are as follows:

1. The candidate must be a graduate of Columbia University in the School of Political Science or the School of Law. In the latter case he must have pursued the curriculum of the School of Political Science for at least two years.

2. He must be an active member of the Academy of Political Science.

3. He must have read at least one paper before the Academy of Political Science during the year next preceding the appointment.

The duty of the lecturer is to deliver annually, before the students of political science, a series of at least twenty lectures, the result of original investigation.

Fellowship Regulations

No fellow shall be allowed to accept remunerative employment except by permission of the President, and the acceptance of any such employment, without such permission, shall operate to vacate the fellowship.

All fellows, except as hereinbefore provided, shall be required to pursue their studies during the term of their fellowship at the University, unless permission be granted by the President to study elsewhere.

All fellows shall be governed by such rules and regulations, not inconsistent with the statutes, as may be prescribed by the Council.

Barnard Medal

Barnard Medal

A gold medal, known as the "Barnard Medal for Meritorious Service to Science," is awarded at commencement at the close of every quinquennial period dating from the 17th day of July, 1889, to such person, if any, whether a citizen of the United States or of any other country, as shall within the five years next preceding have made such discovery in physical or astronomical science, or such novel application of science to purposes beneficial to the human race, as in the judgment of the National Academy of Sciences of the United States shall be esteemed most worthy of such honor.

Award of 1895

LORD RAYLEIGH, F. R. S. PROFESSOR WILLIAM RAMSAY, F. R. S.

Loubat Prizes

Loubat Prizes

Mr. Joseph F. Loubat has established, at Columbia University, two prizes, a first prize of one thousand dollars, and a second of four hundred dollars, for the best works published in the English language upon the history, geography, archæology, ethnology, philology, or numismatics of North America. The competition for these prizes is open, under the deed of gift, to all persons, whether connected with Columbia University or not, and whether citizens of the United States or of any other country. After 1898, no treatises shall be eligible for the purposes of the competition except such as relate to the topics involving antiquarian research, or that refer to events prior to 1776. In order to insure consideration of their works, authors are invited to send copies to the President of Columbia University, not later than April 1 of the year in which the prize is to be awarded ; but the competition will not be restricted to works thus submitted. Copies of the regulations adopted by the Trustees can be obtained from the Secretary of the University.

Mr. Loubat has provided a permanent endowment for these prizes, which will make it possible to award them at least every five years. Beginning with the competition of 1898, it has been decided to divide the above list of subjects into two groups, in which the award will be made alternately. These groups will consist, respectively, of history, geography, and numismatics ; and of archæology, ethnology, and philology. It has also been decided that, hereafter, Mr. Loubat's foundation shall be employed to stimulate research and not simply to reward the authors of meritorious works published without reference to these prizes. That is, the University will call for the investigation of certain questions and the publication of the results, and the best works produced in answer to this call, if of sufficient value, will receive the prizes. The awards to be made in 1898 shall be conferred for works relative to subjects of the second group. One or more special topics of investigation may be recommended, and the awards limited primarily to works upon such topic or topics. But if no works upon the topics suggested seem worthy of an award, the prizes will be adjudged to the best works falling within the general group of subjects designated for the period.

It is hoped that Mr. Loubat's generous foundation may serve to encourage

American research in a field that is peculiarly our own, but in which much of the best work has hitherto been done by strangers.

The Committee of Award for 1898 consists of the following members: Professor H. T. Peck, Columbia College (Chairman); Professor Daniel G. Brinton, University of Pennsylvania; and W. J. McGee, Esq., Smithsonian Institution, Washington, D.C.

Award of 1893

First Prize, HENRY ADAMS, for his "History of the United States of America during the Administrations of Jefferson and Madison," 9 vols., 1889–90.

Second Prize, A. F. BANDELIER, for his "Report of Investigations among the Indians of the Southwestern States." 2 vols., 1890–92.

Grant Squires Prize

rant
quires
rize

A prize known as the "Grant Squires Prize," consisting of the income to be derived from the fund heretofore established by Mr. Grant Squires, of the class of 1885, is awarded at commencement at the close of every quinquennial period, dating from the first day of July 1895, to such graduate, conducting an original investigation of a sociological character as shall be adjudged most worthy by a Committee of Award, consisting of the President, the professor of Sociology, and one of the professors of Political Economy, appointed by the Faculty of Political Science. Such award shall be deemed to be a recognition of scientific ability and achievement, as well as an encouragement of research.

PRIVILEGES IN OTHER INSTITUTIONS OPEN TO STUDENTS OF COLUMBIA UNIVERSITY

merican
luseum of
atural
listory
letropolitan
luseum of
rt

The American Museum of Natural History places its collection at the service of advanced students of Columbia University for the purposes of study and research and provides them with the necessary facilities for work.

The Metropolitan Museum of Art admits students of Columbia University to the Museum on presentation of their matriculation cards, and gives them permission to draw, sketch, or copy objects in the Museum; the curator of the department in which the student desires to work furnishing him with cards for the work.

Objects may be removed temporarily from exhibition for the purpose of special study, and students are allowed to study these objects in rooms specified for the purpose.

nion
heological
eminary

The Union Theological Seminary admits, without fee, such students of high standing in the senior year of Columbia College and in the graduate department of the University, as may be recommended by the President, to such lectures in the regular courses of the Seminary as may be agreed upon by the faculty of the Seminary and the President of Columbia University, and also any students of high standing in the graduate department of Columbia University recommended by the President, to any optional or special classes, subject to the approval of the faculty of the Seminary.

The privileges of the library of the Seminary, for reference, are open to all students of Columbia University on recommendation of the President. Reciprocal advantages are offered by Columbia to students of the Seminary.

Teachers College

The courses of instruction and the library of the Teachers College, subject to the regulations of the institution, are open, without fee, to all matriculated students of Columbia University.

Botanical Garden

Columbia University has the right to conduct university courses in botany at the New York Botanical Garden and to use the laboratories and floral material of the same, and all courses of instruction given there are open to the officers and students of the University without charge.

BARNARD COLLEGE

Barnard College, incorporated in 1889 by the Regents of the University of the State of New York, is a college for women, in close affiliation with Columbia University. It is an independent corporation. At Barnard College the curriculum is the same as at Columbia College, and Columbia makes itself responsible for its students by conducting all the examinations. These are identical, so far as possible, with those of Columbia. The instruction at Barnard is given for the most part by Columbia instructors, and, when this is impossible, by persons appointed with the approval of the President of Columbia University. Degrees are given to the graduates of Barnard College by Columbia University. Through Barnard College, women, properly qualified, can obtain the Columbia degrees of bachelor of arts, master of arts, and doctor of philosophy. In the three lower years of the course the instruction is entirely separate. In the senior and graduate years certain courses at Columbia are open to the students of Barnard.

For all information concerning Barnard College, address the Bursar of Barnard College, Morningside Heights.

PUBLIC WORSHIP

Prayers are read in Room 509, Schermerhorn Hall, every week-day, except Saturday, at 12.30 P. M., with the reading of the Scriptures and singing, and an address by the Chaplain. All officers and students of the University are invited to be present.

THE LIBRARY

The library, now installed in the new building, is open daily from 8.30 A.M. until 10 P.M. All officers, students, and graduates of all departments of the University have free access to the library and may draw books for home use. Undergraduates and alumni may draw books not exceeding three volumes in number for a period not exceeding two weeks, subject to renewal in proper cases.

Officers, students, and graduates of Barnard College and of the Teachers College have corresponding privileges, and the library of the Teachers College is open, on similar terms, to persons connected with the University. Officers of the New York University and of the College of the City of New York have

been granted the same privileges in the library as alumni of Columbia University.

Persons not connected with the University, who have occasion to use the library for purposes of study, and who are responsibly introduced to the Librarian, are given the privilege of using the library in the building.

The reference library of about 10,000 volumes consists of a carefully selected body of reference books and of the most important works on all subjects in standard editions, representing the leading authors in all literatures.

Connected with the stacks in which are stored the books relating especially to the departments of Philosophy, Education, Literature, and Philology, the Sociological and Economic Sciences, Public Law, and History, are 18 special study rooms open only to authorized readers. This arrangement is intended to give to advanced students and investigators in these fields the fullest opportunity to carry on their work by the use of a quiet room in the immediate vicinity of the literature of their subjects.

The reading-room of the law library occupies the middle of the north wing of the library building, on the main floor. The law reading-room is the central feature of the law school, to whose uses the north wing of the building is devoted. The law reading-room is flanked on one side by the dean's office, and on the other by the law students' conference room. Professors' rooms open from the gallery which runs around three sides of the reading-room. The law library is under the immediate charge of an experienced law librarian.

The Avery Architectural Library is a collection of about 15,000 volumes relating to architecture and the decorative arts, including many works on the fine arts. There is a special reading-room for this library and it is in charge of a special librarian.

The entire library is carefully and accurately catalogued both by authors and subjects. The catalogue is on cards accessible to the public. Competent reference librarians are on duty to render any needed assistance to readers, whenever the library is open.

The library contains about 240,000 volumes, exclusive of unbound pamphlets and duplicates. The additions to the library for the past five years have averaged over 18,000 volumes annually. The library is well represented in all the subjects taught in the various courses of the University.

The library contains a number of interesting and notable special collections. Among these may be mentioned the Phœnix Library, consisting of 7000 volumes, the gift of Stephen Whitney Phœnix of the class of 1859 ; the Avery Architectural Library with 15,000 volumes devoted to architecture and the building and industrial arts ; the Mary Queen of Scots Library, collected and given by General J. Watts de Peyster, containing 400 volumes ; the collection of books by and about Goethe, containing 1200 volumes ; and the Immanuel Kant Collection of over 600 volumes. A valuable possession of the library is the Townsend Library of National, State, and Individual War Records.

DEPARTMENTS OF INSTRUCTION

When an announced course has not been applied for by at least three students, candidates for a degree, the instructor shall be at liberty to withdraw the course.

The number of hours, unless otherwise specified, indicates the number of hours a week for the entire year.

Anatomy

GEORGE SUMNER HUNTINGTON, M.D.....*Professor*
BERN BUDD GALLAUDET, M.D.....*Demonstrator*
WILLIAM H. ROCKWELL, M.D.....*Assistant Demonstrator*
GEORGE EMERSON BREWER, M.D.....*Assistant Demonstrator*
FREDERICK JOHN BROCKWAY, M.D.....*Assistant Demonstrator*
JOSEPH A. BLAKE, M.D.....*Assistant Demonstrator and Alumni Association Fellow in Anatomy*
GEORGE W. CRARY, M.D.....*Assistant Demonstrator*
HOWARD D. COLLINS, M.D.....*Assistant Demonstrator*
WALTON MARTIN, M.D.....*Assistant Demonstrator*
C. C. CARMALT, M.D.....*Assistant Demonstrator*
ARTHUR S. VOSBURGH, M. D.....*Assistant Demonstrator*

Courses

1—General introduction to vertebrate morphology—Anatomy of the body cavities—Visceral and topographical course—Thorax and abdomen. Lectures combined with demonstrations. 3 hours. Professor HUNTINGTON

Required, in the second year, of candidates for the degree of M.D.

2—Demonstrations to sections of the class—Cranial osteology and syndesmology, myology, angeiology of the head and neck and peripheral nervous system of the neck. 1 hour. Dr. BLAKE

Required, in the first year, of candidates for the degree of M.D. Elective in conjunction with 3, 4, and 5, for seniors in Columbia College.

3—Demonstrations to sections of the class—Osteology, syndesmology, myology, peripheral nervous system, and angeiology of the extremities. 2 hours. Dr. BROCKWAY

Required, in the first year, of candidates for the degree of M.D. Elective for seniors in Columbia College, in conjunction with 2, 4, and 5.

4—Demonstrations to sections of the class.

(B) Preliminary visceral course—Anatomy of the viscera and body cavities. 1 hour.

This portion of the course is designed to afford that general instruction in the descriptive anatomy and the relations of the viscera which is indispensable for the understanding of the courses in the normal histology and physiology of the viscera. Dr. BREWER

Required, in the first year, of candidates for the degree of M.D. Elective for seniors in Columbia College, in conjunction with 2, 3, and 5.

5—Laboratory course—Dissection of the human body. 18 to 20 hours a week, at various hours, for from 3 to 5 periods of 4 weeks each. Professor HUNTINGTON, Dr. GALLAUDET, and the ASSISTANT DEMONSTRATORS OF ANATOMY

Required, in the first year, of candidates for the degree of M.D. Elective for seniors in Columbia College, in conjunction with 2, 3, and 4.

6—Laboratory course—Dissection of the human body. 10 to 12 hours a week for from 6 to 11 weeks. Professor HUNTINGTON, Dr GALLAUDET, and the ASSISTANT DEMONSTRATORS OF ANATOMY

Required, in the second year, of candidates for the degree of M.D.

7—Demonstrations to sections of the class—Anatomy of the mouth, pharynx and larynx—The auditory apparatus—The central nervous system. 3 hours Dr. GALLAUDET

Required, in the second year, of candidates for the degree of M.D.

8—Demonstrations to sections of the class—Visceral anatomy—This course preserves an organic connection with Course 1, and presents for direct examination and demonstration the preparations serving to illustrate that course. 2 hours. Dr. MARTIN

Required, in the second year, of candidates for the degree of M.D.

9—Demonstrations to sections of the class—Anatomy of the cranial nerves. 1 hour for one half-year. Dr. MARTIN

Required, in the second year, of candidates for the degree of M.D.

10—Laboratory courses in animal morphology—No specified number of hours a week. Professor HUNTINGTON

Optional for qualified candidates for the degree of M.D. Open as major or minor courses to candidates for the degree of A.M. or of Ph.D.

11—Lecture course on comparative vertebrate morphology. Professor HUNTINGTON.

During the session 1897–98, a series of University Lectures and Demonstrations based on the material contained in the morphological museum will be given. This course, established under the Faculty of Pure Science, is open as an optional to candidates for the degree of M. D.

Subjects and dates of lectures will be announced at the beginning of the session.

Research

12—The laboratory of animal morphology is open for research, under the direction of the professor, to advanced workers. Professor HUNTINGTON

Fellowships

For the fellowships, open to persons desiring to do special work under the professor of Anatomy, see page 27.

Equipment

The recently completed erection of a plant for the production of artificial cold by the anhydrous ammonia process has enabled the department, through the means offered for the indefinite preservation of fresh subjects by the cold-storage system, greatly to increase the amount of material available for laboratory work ; and has also rendered it possible so to regulate the temperature of the general laboratory that the work can be carried on without difficulty during the warmer months at the beginning and close of the academic year.

The laboratory for advanced morphological research occupies the third story of the new anatomical building. Every facility for advanced and research work in morphology is here extended. The established connections of the department furnish abundant human and comparative material, both mature and embryonal. The private library of the professor of Anatomy is at the disposal of advanced workers.

Much work has been done in the formation of a museum of human and comparative anatomy, the ultimate design of which is to present, in as complete a manner as possible, a view of the evolution of the forms of animal life, and of their natural relations, both in series of natural groups, and in the comparative and relative position of organs and systems. Even the approximate attainment of this aim will require much time and work. For the present, the energies of the department are directed toward placing in position the very abundant vertebrate material already on hand, and the collection of models and casts pertaining chiefly to human anatomy. The collection, both as regards groups and the individual preparations, is designed for the illustration of both elementary and advanced courses and is largely used in the instruction of the medical undergraduates and in advanced study and research. The new anatomical building will provide the opportunity for the further development of this invaluable portion of the departmental equipment. The first and second stories of the new building will be devoted to the morphological museum, and it is hoped that in the space thus provided the continual development of scientific anatomy, both for purposes of undergraduate instruction and of advanced research, will steadily proceed.

In addition to the museum collection proper the department is constantly adding to a large collection for advanced study and research.

A study-collection of human osteological preparations is so administered as to enable every student to take out the different osteological series and retain them for private study as long as required.

Anthropology

LIVINGSTON FARRAND, A.M., M.D.....*Instructor*
FRANZ BOAS, Ph.D.....*Lecturer*
WILLIAM Z. RIPLEY, Ph.D.....*Prize Lecturer*

Of the courses in this department, 1 and 3 are elementary in character and intended as general introductions to Ethnology and Anthropology. Courses 2, 4, and 5 are for advanced students, and candidates for higher degrees.

Courses

1—(*a*) Anthropology. General introductory course. Lectures, essays, and discussions. 2 hours. Dr. FARRAND

(*b*)—Ethnology and geography. Lectures. 2 hours. Dr. RIPLEY

(*a*) and (*b*) are taken together and count as one course.

2—Anthropology—primitive culture. Lectures, papers, and discussions. 2 hours. Dr. FARRAND

3—Physical anthropology. General introductory course. Lectures, essays, and discussions. 2 hours. Dr. BOAS

4—Physical anthropology—the application of statistical methods to biological problems. Advanced course. Lectures, reports, and laboratory work. 3 hours. American Museum of Natural History. Dr. BOAS

5—North American languages. Seminar. Dr. BOAS

Equipment

The department is thoroughly equipped with ethnological and anthropological charts and maps, with skulls, casts, and masks of lower races, and with material and instruments for work in anthropometry.

The anthropological section of the University library is being rapidly enlarged, the journals in the subject are on file in the reading-room, and special efforts have been made to obtain back numbers of all the leading periodicals, the files of which are now practically complete.

The valuable collections of the American Museum of Natural History are available for the students of Columbia University and form a most important adjunct to the work of the department.

Architecture

WILLIAM R. WARE, LL.D.....*Professor of Architecture*
ALFRED D. F. HAMLIN, A.M.....*Adjunct Professor of Architecture*
FRANK DEMPSTER SHERMAN, Ph.B.....*Adjunct Professor of Architecture*
MAXIMILIAN K. KRESS, A.M.....*Curator and Lecturer in Architecture*
GRENVILLE T. SNELLING, S.B.....*Instructor in Architectural Engineering*
CHARLES A. HARRIMAN.....*Instructor in Architectural Drawing*
CHARLES P. WARREN, A.M.....*Tutor in Architectural Construction*
WILLIAM T. PARTRIDGE.....*Lecturer in Architectural Design*
HENRY F. HORNBOSTEL, Ph.B.....*Assistant in Architectural Design*

The first three years are given to parallel courses in drawing and design, in history and ornament, and in mathematics, architectural engineering, specifications, and building materials, with exercises in the reading of French and German text-books and the writing of English. In the second and third years

there are lectures on the theory of architecture and on the decorative arts. Many of these subjects are given in alternate years, two classes taking them together. In the fourth year the students have the choice of an advanced course in history and design, or of an advanced course in scientific and practical construction. These are identical with the university courses in these subjects, so that a student who selects one of these courses as an undergraduate may return and take the other as a university student.

Graduates of colleges, schools of science, and schools of architecture, and professional draughtsmen of mature age are received as special students, not candidates for a degree, into such courses as they are qualified to pursue.

In alternate years are awarded a travelling fellowship of the value of $1300, established by the Trustees in recognition of the liberality to this department of Mr. F. A. Schermerhorn, and a scholarship in the American School of Architecture in Rome, of the value of $2000, the gift of Mr. C. F. McKim. Courses 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, and 15 are open as electives to seniors in the College.

Courses

1—Ancient architectural history. 3 hours, first year. Text-book: Reber's *History of Ancient Art.* Mr. KRESS

2—Mediæval architectural history—Byzantine, Romanesque, Gothic. 2 hours, first half-year, with reading of a French text-book by the second class and of a German text-book by the third class. 2 hours reports and criticisms, and 15 hours original research in library and drawing-room, second half-year. Exercises in historical design (see 15). Text-books: Corroyer, *L'Architecture Gothique*, and Hauser, *Styl-lehre des Mittelalters* (see 16). Every other year to the second and third classes together (alternating with 3). Given in 1898–99. Professor WARE and Mr. KRESS

3—Modern architectural history — The Renaissance, modern revivals, Oriental and American architecture. 2 hours, first half-year, with reading of a French text-book by the second class and of a German text-book by the third class. 2 hours lectures, and 15 hours research in library and drawing-room, second half-year. Exercises in historical design (see 15). Text-books: Palustre, *L'Architecture de la Renaissance;* Hauser, *Styl-lehre-Renaissance* (see 16). Every other year to the second and third classes together (alternating with 2). Given in 1897–98. Professor HAMLIN and Mr. KRESS

4—The theory of architecture—In alternate years: (*a*) The theory of form, proportion, symbolism; (*b*) the decorative arts, stained glass, mosaic, fresco. Given in 1898–99. (*c*) The theory of color; (*d*) planning, composition, and style. Given in 1897–98. 1 hour, the second and third classes together. Professor WARE

5—History of ancient ornament—The decorative forms of Egyptian, Assyrian, Greek, and Roman art. 1 hour, first year. Professor HAMLIN

6—History of mediæval ornament—Byzantine and Gothic ornament. 1 hour. Every other year to the second and third classes together (alternating with 7). Given in 1898–99. Professor HAMLIN

7—History of modern ornament—Renaissance, Oriental and modern ornament. 1 hour. Every other year to the second and third classes together (alternating with 6). Given in 1897–98. Professor HAMLIN

8—The elements of architecture—Mouldings, the orders, pedestals, pilasters, pediments, intercolumniation, superposition, balusters and balustrades, arches and arcades, imposts, doors, windows, roofs, spires, steps, stairs, vaults, domes. Eighteen plates required. 3 hours, second half of first year. Professor SHERMAN

9—Drawing

(*a*) Architectural drawing, with brush, pencil, and pen. 13 hours, first year. Mr. HARRIMAN

(*b*) Freehand drawing, with pencil, pen, and brush ; sketching and drawing of ornament and the figure from lithographs, photographs, and casts ; water-colors. About 2 hours a week throughout four years. Professor HAMLIN, Mr. HARRIMAN, and Mr. PARTRIDGE

(*c*) Historical drawing. 2 hours, first year. Ancient history, in connection with Course 1. Mr. KRESS

Second and third years, 15 hours, during part of the second half-year. In alternate years—mediæval history in connection with Course 2. Professor WARE, Mr. KRESS, and Mr. PARTRIDGE. Modern history, in connection with Course 3. Professor HAMLIN, Mr. KRESS, and Mr. PARTRIDGE

(*d*) Sketches and measured drawings from buildings. Second, third, and fourth years. Professor HAMLIN and Mr. PARTRIDGE

10—Projections, intersections, and shades and shadows. 3 hours, first half of first year. Twenty plates required. Professor SHERMAN

11—Perspective. 8 lectures, second year. Eight plates required. Professor WARE

12—Descriptive geometry, stereotomy (stone-cutting). 1 hour, fourth year. Twenty plates required. Professor SHERMAN

13—Specifications—In successive years :

(*a*) 1 Masonry : stone-work, brick-work, plastering ; drainage ; fire-proofing. (In 1899–1900)

2 Wood-work : carpentry, joinery, hardware, painting, glazing, roofing ; slow-burning construction ; heating and ventilation. (In 1897–98)

3 Iron-work : steel and iron construction, joints, framing, and bracing ; plumbing. (In 1898–99.)

The class copy a model specification and are examined upon the lectures. 1 hour, first, second, and third years. Mr. WARREN

(*b*) 1 Building-stones, artificial stones, cements, asphalt, terra-cotta. (In 1899–1900.)

2 Growth and preservation of wood ; paints, glass. (In 1897–98.)

3 Metals, fire-proofing. (In 1898–99.)

1 hour, first, second, and third years. Professor WARE, Professor CHANDLER, Professor ROOD, Professor MUNROE, Professor RICKETTS, Professor MOSES, Professor KEMP, Professor PEELE, Professor CROCKER, Professor HAMLIN, Mr. SNELLING, and Mr. WARREN

14—Architectural engineering—(*a*) Analytical geometry: the differential and integral calculus. 2 hours, first year. (*b*) Analytical mechanics: statics, elementary dynamics. 3 hours, second year. Text-book: Lanza's *Applied Mechanics*. Professor SHERMAN. (*c*) Applied mechanics: foundations, retaining walls, walls, pillars, beams, trusses, arches, vaults, and domes. 5 hours, third year. Mr. SNELLING

15—Architectural design. 1 hour, first year, 15 hours, first half of the second and third years. Problems in design: plans, elevations, sections, and details. Professor WARE, Professor HAMLIN, and Mr. PARTRIDGE

In the second year the problems involve special drill in the use of the orders; in the third year in planning and composition (see 19).

In the second and third years the afternoons of the second half-year are mainly occupied by historical study; but there are also a limited number of problems in historical design (see 2 and 3).

16—Archæology. 2 hours, second year, in French. Text-books: Corroyer, *L'Architecture Gothique;* Palustre, *L'Architecture de la Renaissance.* 2 hours, third year, in German. Text-books: Hauser, *Styl-lehre des Mittelalters;* Hauser, *Styl-lehre-Renaissance* (see 2 and 3). Mr. KRESS

17—Architectural essays. 1 hour, first, second, and third years. Professor WARE

18—Advanced architectural history. 2 hours, fourth year. Reading and writing on special topics with illustrative drawings. Professor WARE

19—Advanced architectural design—Advanced problems in planning and composition. 25 hours, fourth year. Professor HAMLIN and Mr. HORNBOSTEL

20—Advanced architectural engineering—Practical examples in applied mechanics, treated both graphically and analytically. Problems in constructive design. 15 hours, 15 hours practice, fourth year. Professor BURR, Professor WOODWARD, Mr. SNELLING, Mr. FOYE, and Mr. BLACK

21—Advanced practice—The study of building processes. 2 hours, fourth year. Mr. WARREN

22—University course in architectural history and design. 27 hours. Professor WARE, Professor HAMLIN, and Mr. HORNBOSTEL

23—University course in architectural engineering and practice. 30 hours. Professor BURR, Professor WOODWARD, Mr. SNELLING, Mr. FOYE, Mr. WARREN, and Mr. BLACK

These two university courses are identical with the fourth-year elective courses 18, 19, 20, 21. They are open to graduates of colleges and scientific schools who are qualified to take them, and to experienced draughtsmen.

Properly qualified candidates are received as special students for periods of two months at a time.

Equipment

The equipment of the department consists of about 15,000 photographs, about 900 books, a classical library of prints and plates, the Avery Architectural Library of about 13,500 volumes, a collection of MS. drawings from the *École*

des Beaux-Arts, a collection of casts of architectural details from ancient and modern Roman buildings, a collection of building-stones, tools, and materials, and about 5000 lantern-slides of architectural subjects. The Willard collection of architectural casts at the Metropolitan Museum is open to students every day and two evenings every week.

Astronomy

JOHN KROM REES, E.M., Ph.D.....*Professor*
HAROLD JACOBY, Ph.D.....*Adjunct Professor*
HERMAN STEARNS DAVIS, Ph.D.....*Tutor*

Courses

1—General astronomy—This course is historical and descriptive, and is supplemented by visits to the observatory, where students are taught to locate the principal constellations, and are afforded opportunities to view the sun, moon, planets, nebulæ, and stars. Reference books : Young's *General Astronomy*, Grant's *History of Physical Astronomy*, Clerke's *History of Astronomy during XIX Century*, and Clerke's *System of the Stars*. 2 hours. Professor REES, assisted in the observatory by Dr. DAVIS

Elective for seniors and juniors in the College who have taken Physics 1 or 4 or the equivalent.

2—Spherical and practical astronomy—This course consists mainly of the study and use of the sextant for time and latitude determinations, and of the transit instrument for time. Reference book : W. W. Campbell's *Hand-book of Practical Astronomy*. 2 hours lectures and 2 hours observatory work. Professor REES and Dr. DAVIS

Elective for seniors in the College who have taken Mathematics 1 and either Physics 1 or 4 or the equivalents. Offered as a minor for the degree of A.M.

3—Geodesy—This course deals with the subjects named in the scheme of the Summer School in Geodesy. During the vacation the students are required to attend the summer school for six weeks to learn the use of apparatus, as indicated by the following :

(1) Use of the nautical almanac and American ephemeris.
(2) Sextant observations for time and latitude.
(3) Transit instrument for time.
(4) Base line measurements.
(5) Angle measurements by "directions."
(6) Determination of the azimuth of a line.
(7) Barometric hypsometry.

Reference Books : Campbell's *Practical Astronomy*, Clark's *Geodesy*, *United States Coast Survey Reports*, and Jordan's *Handbuch der Vermessungskunde*. 2 hours lectures first year and first half of the second year. Professors REES, JACOBY, and Dr. DAVIS

Required of students in the Civil Engineering and in the Sanitary Engineering courses during third and fourth years. The third-year work is offered as a minor for the degree of A.M. The fourth year, including summer-school work, is offered as a major for the degree of A.M. Elective for seniors having the requisite Mathematics and Physics.

4—Advanced spherical and practical astronomy—This course deals with the subjects of time, latitude, and longitude; use of equatorial and of zenith telescopes. Reference books: Chauvenet's (2 vols.) *Spherical and Practical Astronomy*, and Doolittle's *Practical Astronomy*. 2 hours lectures and 4 hours observatory work for two years. Professors REES and JACOBY

First year offered as a major for the degree of A.M. or as a minor for the degree of Ph.D. Two years' work offered as a major for the degree of Ph.D.

5—Theoretical astronomy—This course deals mainly with the theory of comet orbits and their calculation. Reference books: Klinkerfues' *Theoretische Astronomie* and Oppolzer's *Bahnbestimmung*. 1 hour, supplemented by computations, for 2 years. Professor JACOBY

First year offered as a major for the degree of A.M. or a minor for the degree of Ph.D. Two years' work offered as a major for the degree of Ph.D.

6—Theory and method of reduction of photographic star plates—This course deals with the determination of star places from the photographic plates, and includes the subjects of stellar parallax and proper motion. 1 hour, with practical work, for 2 years. Professor JACOBY

First year offered as a major for the degree of A.M. or a minor for the degree of Ph.D. Two years' work offered as a major for the degree of Ph.D.

Equipment

The apparatus of the department consists principally of the following:

(1) The Rutherfurd equatorial of 13 inches aperture with a correcting lens for photography.
(2) Three transit instruments.
(3) Two fine clocks and several chronometers.
(4) Three chronographs.
(5) Three-inch zenith telescope by Wanschaff of Berlin.
(6) Measuring machines for photographs by Rutherfurd and by Repsold.
(7) Personal equation machine.
(8) Base-measuring apparatus.
(9) Theodolites by Wanschaff of Berlin and Saegmuller of Washington, D. C., with micrometer microscopes reading to a second of arc.

The library is well supplied with the books relating to the work of the department.

Bacteriology

(See page 118)

Biology

(See page 140)

Botany

LUCIEN MARCUS UNDERWOOD, Ph.D.....*Professor*
NATHANIEL LORD BRITTON, Ph.D.....*Emeritus Professor*
CARLTON CLARENCE CURTIS, Ph.D.....*Tutor*
HERBERT MAULE RICHARDS, S.D.....*Tutor*
JOHN KUNKEL SMALL, Ph.D.....*Curator of the Herbarium*

The courses in Botany are arranged with the intention of giving a broad general knowledge of the subject during the first year, and permitting some degree of choice during the second year ; for those who continue the work as a graduate subject, the widest possible range of subjects is open to the students' choice. Course 1 can be elected by any student who has reached the sophomore year, and if the subject be pursued consecutively for three years, the candidate will be ready to enter upon research work as a major subject. Two years would be sufficient for this preparation if the candidate elected two courses in Botany during the second year. Courses 1–4, or their equivalent, together with Course 5 or Course 7, according as the trend is toward morphology or physiology, form the necessary preparation for commencing a major subject in Botany. Course 1, with any two additional courses or an equivalent, will be required as the necessary preparation for commencing a minor subject in Botany. Minor graduate courses will be arranged after conference with the head of the department.

Auditors will be admitted to any courses for which they may be prepared.

Courses 9–12 are primarily for graduate students.

Courses

1—Elementary botany—General introduction. Principles of general biology ; outlines of the evolution of the plant world ; relation of plants and animals. Study of types of the lower plants during the first half-year, followed by an examination of representatives of the higher plants (Spermaphytes) during the second half-year ; comparative study of a few of the leading families. 3 laboratory sessions a week. Professor UNDERWOOD and Dr. CURTIS

Open to those who have reached the sophomore year.

2—Plant anatomy—A systematic study of the cells and tissues of the higher plants. 2 laboratory sessions a week, first half-year. Dr. CURTIS

Pre-requisite : Course 1, or its equivalent.

3—Plant physiology—A course in experimental physiology supplemented by selected readings. 2 laboratory sessions a week, first half-year. Dr. CURTIS

Pre-requisite : Course 1, or its equivalent.

NOTE.—In this and other courses in vegetable physiology the nature of the work occasionally requires attendance at the laboratory at unusual times.

4—General morphology of cryptogams—Detailed study of some group or groups of the lower plants. 2 laboratory sessions a week, second half-year. Professor UNDERWOOD and Dr. CURTIS

This course naturally follows Course 2, to complete an elective for the year. Pre-requisite : Course 1, or its equivalent.

5—Botanical problems—Illustrating advanced methods of fixing, imbedding, sectioning, and staining. 1 laboratory session a week, second half-year. Dr. CURTIS

Pre-requisite : Course 2.

6—Economic botany—Study of plants useful to man as food, medicine, timber, and fibre. 1 hour lecture, or its equivalent, in the laboratory. Professor UNDERWOOD

Pre-requisite : Course 1, or its equivalent ; more especially intended for those looking towards a course in medicine.

7—Plant physiology—A continuation of Course 3, but with the added prerequisite of Course 2. 1 lecture and 2 laboratory sessions, second half-year. Dr. CURTIS

8—Lectures in general botany—A brief systematic study of plant structure and function, and the characters and relations of the leading groups of plants. 2 lectures and assigned reading, first half-year. Professor UNDERWOOD

Required of first-year students in the courses in Civil and Mining Engineering; elective to seniors in the College.

9—The natural families of flowering plants—Study of the diagnostic characters of the orders in biological sequence. Reference books: Engler and Prantl's *Natürlische Pflanzenfamilien* and Baillon's *Histoire des Plantes*. 1 hour conference and 2 laboratory sessions. Dr. SMALL

Pre-requisite: Course 2. Offered as a major for the degree of A.M. if preceded by Courses 1–5.

10—Research work in morphology or physiology, or study of special problems in development—The work will be selected after conference, and will aim to accommodate the special equipment of the candidate. Not less than 10 hours a week for three years (or with special work two summers in the field, two years). Dr. CURTIS

11—Critical study of a family or genus of plants of not less than fifty species—The group may be selected from the entire range of the vegetable world, but will be selected with a view to the special opportunities for field observation, or garden cultivation. Field, herbarium, and laboratory work. Not less than 10 hours a week for two years, with two summers in the field. Research. Professor UNDERWOOD

12—Collection, determination, and comparative study of the plants of some restricted area—Field, herbarium, and laboratory work. Not less than 10 hours for two years; field-work during two summers. Research. Professor UNDERWOOD

Courses 10, 11, and 12 are offered as major courses for the degree of Ph.D. A proportionate amount of work in Courses 10 and 11 will be accepted as a major for the degree of A.M.

Equipment.

The department of Botany occupies the third floor of Schermerhorn Hall and the laboratories and lecture rooms have been newly equipped for undergraduate and research work. A large general laboratory, lecture room, library, and morphological and physiological laboratories are fitted up with a full supply of modern instruments for instruction and experiment. The courses of instruction are illustrated with extensive series of models, charts, and lantern-slides. Fresh material is supplied from the conservatory and aquaria. A sufficient number of standard works on the subject are reserved for students' use in the general laboratory, where they will be more directly available in connection with the laboratory practice.

By the agreement entered into between the University and the New York Botanical Garden, all the botanical collections and library of the University (except such as are needed for undergraduate work) are to be deposited in the Museum of the Botanical Garden; the Garden on its part is to supply all the

needed facilities for research work in morphology, physiology, and taxonomy. This combination of forces not only places the department of Botany within reach of material equipment and collections not before available, but opens up facilities for advanced work under conditions that are not excelled. As soon as the new museum building is ready for occupancy, the graduate work will be transferred to Bronx Park.

The Herbarium is accommodated for the present in the large general laboratory (502), and contains about 500,000 specimens, being one of the largest in America; additions are at present made to it at the rate of about 20,000 specimens a year. It comprises: (1) The collections accumulated by Dr. Torrey, which came into the possession of the University at his death in 1873. (2) The collections of Prof. C. F. Meisner of Basle, Switzerland, presented to the University about the time of Dr. Torrey's death by Mr. John J. Crooke. (3) The collections of Dr. A. W. Chapman of Appalachicola, Florida, presented by Mr. Crooke at the same time; this contains the types illustrating Dr. Chapman's Flora of the Southern United States. (4) The moss collection of the late C. F. Austin. (5) The moss collection of the late Dr. J. G. Jaeger, acquired in 1893. (6) Miscellaneous accumulations of spermaphytes, since Dr. Torrey's death, now making up more than one third of the whole collection. (7) A large series of algæ and fungi (largely European exsiccatæ) recently acquired. The Herbarium is rich in types of species described by Dr. Torrey, Professor Meisner, Dr. Chapman, Dr. Asa Gray, Mr. Austin, Professor Britton, Dr. Rusby, and Dr. Morong. The various collections are all arranged in a single series, but each sheet is identified by a designative label or stamp. There are also extensive collections of fruits, seeds, woods, and material illustrating economic botany, placed in cases and drawers.

The direct connection of the department of Botany and the New York Botanical Garden makes access available to the Ellis collection of fungi, the largest accumulation of North American plants of this series in existence, rich in types of American species as well as extended series of European exsiccatæ. The private collection of the professor of Botany, specially rich in pteridophytes, hepaticæ, and basidiomycetous fungi, is also accessible for study. The entire aggregation of collections thus available for students is exceptionally full in every group of plants from slime moulds to composites and offers facilities for reference second to none.

The portion of the University library classified under Botany is shelved in a special library room (508) easily accessible from the laboratories. It now contains about 4000 bound volumes, and about 5000 pamphlets and extracts. These numbers do not, however, represent the whole reference strength of the collection, for all general works, scientific journals, and publications of general scientific societies are shelved in the main library. All the regularly published journals devoted to botany are received, and the sets of most of them are complete.

Two series of publications are issued from the department: a quarto series known as the *Memoirs of the Department of Botany*, of which one volume has been published; and the *Contributions* in octavo, which have commenced the sixth volume.

Chemistry

CHARLES F. CHANDLER, M.D., Ph.D., LL.D.....*Professor of Chemistry*
PIERRE DE PEYSTER RICKETTS, E.M., Ph.D.....*Professor of Analytical Chemistry and Assaying*
CHARLES E. PELLEW, E.M.....*Adjunct Professor of Chemistry*
JAMES S. C. WELLS, Ph.D.....*Instructor in Analytical Chemistry*
HERMANN T. VULTÉ, Ph.D .....*Instructor in Chemistry*
EDMUND H. MILLER, Ph.D.,.....*Instructor in Analytical Chemistry and Assaying*
MARSTON T. BOGERT, A.B., Ph.B.....*Instructor in Organic Chemistry*
LOUIS H. LAUDY, Ph.D.....*Tutor in Chemistry*
FRANCIS PITT SMITH, Ph.B.....*Tutor in Chemistry*
SAMUEL A. TUCKER, Ph.B.....*Tutor in Industrial Chemistry*
ARTHUR P. VAN GELDER, Ph.B.....*Tutor in Chemistry*
J. LIVINGSTON RUTGERS MORGAN, B.Sc., Ph.D., *Tutor in Chemical Philosophy and Chemical Physics*
BENJAMIN M. JAQUISH, Ph.B.....*Assistant in Chemistry*
CHARLES H. FULTON, E.M.....*Assistant in Analytical Chemistry*
EDWIN C. HOLDEN, E.M.....*Assistant in Analytical Chemistry*
HENRY C. SHERMAN, Ph.D.....*Assistant in Analytical Chemistry*
CAVALIER HARGRAVE JOÜET, Ph.D.....*Assistant in Analytical Chemistry*

Courses

1—General inorganic chemistry—Introduction. Laws of chemical combination, history, occurrence, preparation, and properties of the elements and their principal compounds. Text-book: Newth's *Inorganic Chemistry*. 3 lectures and 1 recitation, or 1 laboratory exercise. Professor CHANDLER, Professor PELLEW, and Mr. VAN GELDER

Required of all first-year students in the Schools of Mines, Chemistry, and Engineering. Open as an elective to sophomores, juniors, and seniors in Columbia College, with three lectures and one afternoon in the laboratory.

Laboratory practice comprises the preparation, physical and chemical properties and tests of the principal inorganic elements and compounds. Text-book: Pellew's *Laboratory Exercises in General Chemistry*. 1 laboratory exercise a week for the entire year. Professor PELLEW and Mr. VAN GELDER

Required of Columbia College students who elect Chemistry 1.

2—General inorganic chemistry—Introduction. Laws of chemical combination, history, occurrence, preparation, and properties of the elements and their principal compounds. Text-book: Newth's *Inorganic Chemistry*. 2 lectures a week throughout the year. Professor PELLEW

Laboratory practice comprises the preparation, physical and chemical properties and tests of the principal inorganic elements and compounds. Text-book: Pellew's *Laboratory Exercises in General Chemistry*. 2 afternoon exercises in the laboratory and 2 conferences a week for half the year. Half the class during the first half-year; the other half during the second half-year. Dr. VULTÉ, Mr. SMITH, and Mr. JAQUISH

Required of first-year students in the School of Medicine. Open as an elective to seniors in Columbia College.

3—Physical Chemistry—Text-books: Morgan's *Theory of Solution and its Results;* Ostwald's *Scientific Foundations of Analytical Chemistry.* 2 lectures and 2 hours of laboratory work during the second half of the second year. Text-book for the laboratory: Ostwald's *Physico-chemical Methods.* Dr. MORGAN

Required of all second-year students in the School of Chemistry. Open as an elective to seniors in Columbia College. Pre-requisite: Chemistry 1.

4—Physical chemistry—Energy and energy forms. Photo-chemistry, thermo-chemistry, electro-chemistry; chemical statics; chemical dynamics. Text-books: Ostwald's *Allgemeinen Chemie;* Naumann's *Thermo-chemische Rechnungen;* Le Blanc's *Electro-chemistry;* Ostwald's *Physico-Chemical Methods,* and others. 2 lectures and 1 recitation for the entire year, and 1 afternoon in the laboratory during the first half-year for students pursuing the course in Industrial Chemistry, and 1 afternoon in the laboratory during the second half-year for students pursuing the courses in Analytical and Organic Chemistry. Dr. MORGAN

Required of all fourth-year students in the School of Chemistry. Open as an elective to seniors in Columbia College. Further, open to candidates for the degrees of A.M. and Ph. D. as a minor or major subject. Pre-requisite: Courses 1 and 3.

5—Physical chemistry, advanced course. Original research; reports by students upon new work, from the *Zeitschrift für Physicalische Chemie* and other journals. 2 lectures and at least 12 hours laboratory work throughout the year. Dr. MORGAN

Open to candidates for the degree of Ph.D. as a major subject. Pre-requisite: Courses 1, 3, and 4.

6—Qualitative analysis—Lectures, recitations, and laboratory practice. Text-books: Fresenius' *Qualitative Analysis;* Wells and Cushman's *Schemes for Qualitative Analysis.* 2 lectures, 2 recitations, and laboratory practice. Dr. WELLS and Mr. HOLDEN

Required of first-year students in the School of Chemistry, and in the course of Metallurgy. Open to seniors in Columbia College. Pre-requisite or parallel: Course 1.

7—Qualitative analysis—Lectures and laboratory practice. Text-book: Prescott and Johnson's *Qualitative Chemical Analysis.* 2 lectures and laboratory practice. Dr. WELLS and Mr. HOLDEN

Required of first-year students in the School of Engineering and in the course in Mining Engineering. Pre-requisite or parallel: Course 1.

8—The spectroscope as applied to qualitative and quantitative analysis—Laboratory practice and conferences with the instructors. 8 hours. Professor RICKETTS and Dr. WELLS

Open to candidates for the degree of A.M. as a minor. Pre-requisite: Courses 1 and 6 or 7.

9—Quantitative analysis—Text-books: Cairns' *Quantitative Analysis* and Fresenius' *Quantitative Analysis.* 2 lectures and 2 recitations during the second year, and laboratory practice. Professor RICKETTS and DR. MILLER

Required of second-year students in the School of Chemistry. Open to candidates for the degree of A.M. as a major. Pre-requisite: Courses 1 and 6 or 7.

10—Quantitative analysis—Text-book: Cairns' *Quantitative Analysis.* 2 lectures during the second year, and laboratory practice during the second year and the second half of the third year. Professor RICKETTS and Dr. MILLER

Required of second- and third-year students in the course of Metallurgy.

11—Quantitative analysis—Text-book: Cairns' *Quantitative Analysis.* 1 lecture and 3 hours laboratory practice during the first half of the second year. Dr. MILLER and Dr. SHERMAN

Required of second-year students in the course of Electrical Engineering. Pre-requisite: Courses 1 and 7.

12—Quantitative analysis—Text-book: Cairns' *Quantitative Analysis.* 2 lectures during first half of the second year, with laboratory practice in alternate weeks during the entire year. Professor RICKETTS, Dr. MILLER, and Dr. JOŪET

Required of second-year students in the courses of Mining Engineering. Pre-requisite Course 7.

13—Quantitative analysis—Proximate organic analysis. 2 lectures, 2 recitations, and laboratory practice second half of the third year. Professor RICKETTS and Mr. SHERMAN

Required of third-year students in the School of Chemistry. Open to candidates for the degree of A.M. as a major. Pre-requisite: Course 9.

14—Special methods of commercial analysis—2 lectures throughout the year. Laboratory practice during the second half-year. Professor RICKETTS, Dr. MILLER, Dr. SHERMAN, and Dr. JOŪET

Required of fourth-year students in the course of Analytical Chemistry. Open to candidates for the degree of Ph.D. as a major. Pre-requisite: Course 9 or 10.

15—Special and advanced methods in proximate organic analysis—Research, conferences and laboratory work at least 12 hours. Professor RICKETTS and Dr. SHERMAN

Open to candidates for the degree of Ph.D. as a major. Pre-requisite: Courses 9 and 11.

16—Quantitative analysis, special or new methods, gravimetric, volumetric or electrolytic—Conferences and laboratory work at least 12 hours for one or two years. Professor RICKETTS and Dr. MILLER

Open to candidates for the degrees of A.M. and Ph.D. as a major. Pre-requisite: Course 1 and Course 6 or 7.

17—Assaying—Ores and metallurgical products. Text-book: Ricketts and Miller's *Notes on Assaying.* 2 lectures, 1 recitation, and laboratory practice. Professor RICKETTS, Dr. MILLER, and Mr. FULTON

Required of all third-year students in the courses of Metallurgy and Chemistry during the first half-year, three afternoons a week, and on alternate weeks during the entire year for students in the courses of Mining Engineering.

18—Special methods of assaying ores, alloys and furnace products. Comparison of methods and determination of losses. Professor RICKETTS and Dr. MILLER

Open to candidates for the degree of A.M. or Ph.D. as a minor. Pre-requisite: Course 17.

19—Ore testing for the proper selection of methods of treatment—Conferences and laboratory practice 1 afternoon for one-half of the second half year. Professor RICKETTS and Mr. FULTON

Required of fourth-year students in the courses of Metallurgy and Mining Engineering.

20—Organic chemistry, elementary course—2 hours lectures and 1 hour recitation. Text-book: Bernthsen's *Organic Chemistry*. Mr. BOGERT

Required of all second-year students in the School of Chemistry. Minor for the degree of A.M. Pre-requisite: Course 1.

21—General organic chemistry—In this course the subject is fully treated and the student prepares in the laboratory a large number of organic compounds, besides making elementary analyses and molecular weight determinations. Text-books: Bernthsen's *Kurzes Lehrbuch der organischen Chemie;* Levy's *Organische Præparate;* Gattermann's *Praxis des organischen Chemikers*. During the first half of the fourth year, 3 lectures, 1 recitation, and 22 hours laboratory for all students in the School of Chemistry; 2 hours conferences additional for students pursuing the course in Organic Chemistry. During the second half of the fourth year, 2 lectures and 1 recitation for students pursuing the courses in Industrial Chemistry or Analytical Chemistry; 2 hours conferences and 16 hours laboratory additional for students pursuing the course in Organic Chemistry. Mr. BOGERT

Major for the degree of A.M. Pre-requisite: Courses 1, 3, 6, and 9.

22—Advanced organic chemistry, minor courses—Any one of the following subjects: (1) Physical properties of organic compounds as related to their molecular constitution; (2) Dissociation co-efficients of organic acids; (3) The terpenes and camphors; (4) Synthetic alkaloids; (5) Synthetic perfumes; and such other subjects as may be selected. Personal instruction and laboratory work not less than 12 hours. Mr. BOGERT

Minor for the degree of Ph.D. Pre-requisite: Course 21.

23—Advanced organic chemistry, major course—Original investigation and research. Subject to be assigned or approved by the professor. Personal instruction, conferences, private study, and laboratory work. Mr. BOGERT

Major for the degree of Ph.D. Pre-requisite: Course 21.

24—Industrial chemistry, general course—The subjects discussed are:—(1) Air: nature, sources of contamination, sewer gas, plumbing, draining, disinfection, ventilation. (2) Water: composition of natural waters, pollution, disposal of sewage and house refuse. (3) Artificial illumination: candles, oils and lamps, petroleum, gas and its products, electric light. (4) Limes, mortars, and cements. (5) Building-stones: decay and preservation. (6) Timber and its preservation: pigments, paints, essential oils, varnishes, preserving processes. (7) Explosives: gunpowder, gun-cotton, nitro-glycerine. (8) Glass and ceramics. (9) Electro-metallurgy. (10) Photography. Text-books: Park's *Hygiene* and Wagner's *Chemical Technology*. 3 lectures and 1 recitation. Professor CHANDLER and Professor PELLEW

Required of all second-year students in the Schools of Mines, Chemistry, and Engineering. Open to juniors and seniors in Columbia College. Pre-requisite: Course 1.

25—Industrial chemistry, special course—The subjects discussed are :—(1) Chemical manufactures : acids, alkalies, and salts. (*a*) Sulphur, sulphurous acid, hyposulphites, sulphuric acid, bi-sulphide of carbon. (*b*) Common salt, soda ash, hydrochloric acid, chlorine, binoxide of manganese, bleaching-powder, chlorates, chlorimetry. (*c*) Carbonate of potash, caustic potash. (*d*) Nitric acid and nitrates. (*e*) Iodine, bromide. *(f)* Sodium, aluminum, magnesium. *(g)* Phosphorus, matches. (*h*) Ammonia salts. (*i*) Cyanides. *(j)* Alum, copperas, blue vitriol, salts of magnesia, baryta, strontia. (*k*) Borates, stannates, tungstates, chromates. (*l*) Salts of mercury and silver. (*m*) Oils, fats, soaps, and glycerine. (2) Food and drink : milk, cereals, starch, bread, meat, tea, coffee, sugar, fermentation, wine, beer, spirits, vinegar, preservation of food. (3) Clothing : textile fabrics, bleaching, dyeing, calico printing ; paper, tanning, glue, india-rubber, guttapercha. (4) Fertilizers : guano, superphosphates, poudrettes. Text-books : Wagner's *Chemical Technology ;* Lunge's *Manufacture of Sulphuric Acid and Soda ;* Schultz & Julius' *Kuenstlichen Organischen Farbstoffe ;* Schultz' *Chemie des Steinkohlentheers.* 3 lectures and 1 recitation for two years, one half the subject being discusssd each year. Professor CHANDLER and Professor PELLEW

Required of third- and fourth-year students in the School of Chemistry. Pre-requisite Course 24.

26—Industrial chemistry, laboratory practice—Preparation of chemicals, including solution, filtration, evaporation, crystallization, and distillation, as used in factory practice. 3 afternoons a week during the first half-year. Professor PELLEW and Mr. TUCKER

Required of all third-year students in the School of Chemistry. Open to seniors in Columbia College. Open as a minor for candidates for A.M. Pre-requisite : Course 1.

27—Industrial chemistry, laboratory practice—Special applications : Water pollution and purification ; artificial illumination, petroleum testing ; gas making ; photometry and calorimetry ; electric light : electro-metallurgy ; fermentation, yeast, beer, wine, spirits, alcohol. 3 afternoons a week during the second half-year. Professor PELLEW and Mr. TUCKER

Required of third-year students taking the course in Industrial Chemistry, and of fourth-year students taking the courses in Analytical and in Organic Chemistry.

28—Industrial chemistry, laboratory practice—Special applications : Textile industry, vegetable and animal fibres, bleaching, dyeing, and calico printing ; fats, waxes, and soaps ; fertilizers ; examination of food and drugs. 5 afternoons a week during the second half-year. Professor PELLEW and Mr. TUCKER

Required of fourth-year students taking the course in Industrial Chemistry.

29—Industrial chemistry, advanced course—Original research ; the study and investigation of methods and processes in sanitary and industrial chemistry. Personal instruction and laboratory work for one year. Professor PELLEW and Mr. TUCKER

Major for the degree of Ph.D. Pre-requisite : a knowledge of General, Analytical, and Industrial Chemistry.

Equipment

In the new Havemeyer Hall, the Chemical Department is provided with ample space for its museum, lecture rooms, and laboratories, and every possibl

convenience has been provided for both the instructors and students working in the general or special courses.

There are five chemical lecture rooms, all fully supplied with apparatus and instruments, and equipped lavishly with pneumatic troughs, gas, pressure, exhaust, and electricity. The large chemical lecture room on the ground floor contains 316 seats, and is the largest and handsomest lecture room in the University. Underneath the rear of this room is situated a large store room for lecture apparatus, and connected with it are convenient rooms for preparing the lecture experiments.

The Museum of General Inorganic and Organic Chemistry and of the Chemical Arts, a large and lofty room occupying the whole right wing of the ground floor, contains the elements and all their more important compounds ; representative sets of specimens of all classes of organic compounds ; materials and products illustrating the chemical arts, and numerous models, pictures, and diagrams, illustrating the various branches of the science of chemistry.

The Qualitative and General Chemistry Laboratory is equipped with ninety-six desks, each divided into two sections, for use by different students, and each equipped with sink and water faucet, gas, exhaust, and electric light. The laboratory has been entirely refurnished with new and handsome sets of imported reagent bottles. In the General Chemistry Laboratory, the students of Columbia College and the other schools who select this course as an option, are taught, in a thorough manner, to prepare the more important elements and their inorganic compounds, and to study the principal physical and chemical properties of the same.

In the Qualitative Laboratory, principally used by the students in the Schools of Pure and Applied Science, the reactions of the various metals and salts are taught largely with a view to their separation and identification. The students first learn the properties of the individual members of a single group of acids and bases. Then single members or mixtures of members of this group are submitted to them for indentification; and finally, proceeding from simple to complex substances, they become able to determine the composition of the most difficult mixtures.

The Quantitative Laboratory is equipped with seventy-two desks, each one provided with gas, water, pressure, exhaust, and electricity, besides electric lights. The students first analyze substances of known composition, such as crystallized salts, so that they may constantly check the accuracy of their work by reference to the true percentage composition. Then they proceed to more complex analyses of materials that they would be apt to meet with in their actual practice, such as ores, metals, and minerals, and a great range of commercial articles, both organic and inorganic, such as gas, water, food products, and the like. Attached to the main laboratory is a large and well-equipped balance room, containing accurate balances, and special rooms, which are now being equipped with the latest and most improved apparatus for gas, water, and electrolytic analysis.

The Organic Laboratory contains forty large and commodious desks, each one provided with water, gas, pressure, exhaust, and electricity. The laboratory is also provided with high- and low-pressure steam, and with special rooms

for balances, pressure ovens, glass-blowing, combustions, and for advanced work in various directions. It is thoroughly equipped with all necessary apparatus and instruments for the determination of boiling points, melting points, specific gravities, vapor densities, for proximate and elementary analyses, and for the synthetic preparation of organic compounds.

The Laboratory of Industrial Chemistry is planned for the instruction of students in the practical operations of chemical manufactures and chemical industries, and in the solution of various important problems in sanitary chemistry and hygiene. It is equipped for the manufacture of pure chemicals from their raw materials on an industrial scale, with fine batteries of steam evaporators, and with steam stills, centrigugals, filter presses, crushers, and the like. It includes a dyeing laboratory supplied with a large stock of the most important natural and artificial dye-stuffs, and with all the regular equipment used in the practical testing of dyes, including a calico-printing machine. Connected with it is a photometer room, containing a new and complete outfit for the practical testing of illuminants. Among the other subjects in which practical instruction is to be given in this laboratory may be mentioned, the filtration and purification of water and sewage, fermentation and distillation, the use of the electric furnace, and the manufacture of sugar, petroleum products, and leather.

The new Laboratory of Physical Chemistry is well equipped with the most recent apparatus adapted to a wide range of experimental work in the branches of heat, light, and electricity as applied to chemical problems. The students take up the subject in the second year with special reference to the behavior of substances in solution. In their fourth year they resume the subject from a more advanced standpoint, and, with the aid of the higher mathematics, attack problems of broader range and greater difficulty. Towards the end of their course a simple original investigation is undertaken, which, if successful, is published by the student.

The Assay Laboratory is provided with crucibles and muffle furnaces, both gas and coal, for the fire assay of ores ; also with crushing, pulverizing, and sampling machinery, balance room, store room, and thirty-six well-equipped working desks. It also contains all the apparatus necessary for the wet assay of silver bullion and for laboratory tests in ores.

Dermatology

GEORGE HENRY FOX, A.M., M.D. ..... *Clinical Professor*
GEORGE THOMAS JACKSON, M.D. ..... *Chief of Clinic*
CHARLES C. RANSOM, M.D. ..... *Clinical Assistant*
JOHN CABOT, M.D. ..... *Clinical Assistant*
JOHN H. P. HODGSON, M.D. ..... *Clinical Assistant*
JOHN ALDRICH, M. D. ..... *Clinical Assistant*
CHARLES T. DADE, M.D. ..... *Clinical Assistant*

Courses

1—Clinical lectures at the Vanderbilt Clinic upon the diseases of the skin—1 hour. Professor FOX

Required, in the fourth year, of candidates for the degree of M.D.

2—Practical instruction at the Vanderbilt Clinic in the diagnosis and treatment of the diseases of the skin—12 lessons for each student. Dr. JACKSON

Optional, in fourth year, for candidates for the degree of M.D.

Diseases of Children

ABRAHAM JACOBI, M.D. ..... *Clinical Professor*
FRANCIS HUBER, M.D. ..... *Chief of Clinic*
JOSEPH HUBER, M.D. ..... *Clinical Assistant*
FRED. S. MCHALE, M.D. ..... *Clinical Assistant*
LOUIS M. SILVER, M.D. ..... *Clinical Assistant*
F. BIERHOFF, M.D. ..... *Clinical Assistant*

Courses

1—Clinical lectures at the Vanderbilt Clinic upon the diseases of children—1 hour. Professor JACOBI

Required, in the third year, of candidates for the degree of M.D.

2—Practical instruction at the Vanderbilt Clinic in the diagnosis and treatment of the diseases of children—10 lessons for each student. Dr. FRANCIS HUBER

Optional, in the third year, for candidates for the degree of M.D.

3—Hospital Clinic—Bellevue Hospital, Mondays, 2.30 P.M., from April to June. Professor JACOBI

Optional.

4—Weekly instruction at the bedside, St. John's Guild Children's Hospital, all winter. Professor JACOBI

Economics and Social Science

RICHMOND MAYO-SMITH, Ph.D. ..... *Professor*
EDWIN R. A. SELIGMAN, LL.B., Ph.D. ..... *Professor*
FRANKLIN HENRY GIDDINGS, Ph.D. ..... *Professor*
JOHN BATES CLARK, Ph.D., LL.D. ..... *Professor*
WILLIAM ZEBINA RIPLEY, Ph.D. ..... *Prize Lecturer*
ARTHUR M. DAY, A.M. ..... *Assistant*
GEORGE J. BAYLES, Ph.D. ..... *Prize Lecturer*

The courses offered fall into two divisions: Political Economy and Finance, and Sociology and Statistics. Courses (A) and 1 are the general introductory courses primarily intended for juniors in the College. Courses 3 and 4 are intended to give a general survey, respectively, of political economy and finance, from the historical and comparative point of view. While serving as useful courses for those intending to specialize still further in economics or sociology, they are especially recommended to those who desire to secure some knowledge of political economy as a part of a liberal education. Courses 1 to 8 will be found of especial value to law students seeking to supplement their purely legal studies. Course 16 is an introductory course leading up to

course 20. Courses 20 and 21 are the general systematic courses laying the basis for the other courses in applied sociology. Courses 16 to 23, together with Courses 3 and 8, will be of value to students of theology who wish to extend their knowledge of the social problems of the day.

In addition to the regular courses, there are two seminars, organized to furnish students opportunity for special investigation and original research. Every candidate for the degree of master of arts or doctor of philosophy, taking his major subject in this department, must work in at least one of the seminars.

The allied courses in history and public law will be found extremely useful for the students of social science, because of the close inter-relations of history, law, and economics. Taken together these courses constitute a complete scheme of political science.

Course (A) is required of juniors in the College. Course 1 is open to juniors in the College. Courses 3, 4, 5, 6, and 16 are open to seniors in the College and other candidates for the degree of A.B. The remaining courses are intended for university students.

Courses in Political Economy and Finance

(A)—Principles of political economy—Recitations and essays. 3 hours, second half-year. Professor MAYO-SMITH and Mr. DAY

1—Economic history—Selected text-books, recitations, essays, and lectures. 3 hours, first half-year. Professor SELIGMAN and Mr. DAY

3—Historical and practical political economy—Lectures, discussions, and reading. 3 hours. Professor MAYO-SMITH

4—Science of finance—Lectures and private reading. 2 hours. Professor SELIGMAN

5—Financial history of the United States—Lectures and private reading. 2 hours, first half-year. Professor SELIGMAN

6—Tariff history of the United States—Lectures and private reading. 2 hours, second half-year. Professor SELIGMAN. (Omitted in 1897–98.)

7—Railroad problems—Lectures and private reading. 2 hours, second half-year. Professor SELIGMAN

8—History of political economy—Lectures, discussions, and readings. 2 hours. Professor SELIGMAN. (Omitted in 1897–98.)

9—Economic theory I—The static laws of distribution—Lectures and private reading. 2 hours, first half-year. Professor CLARK

10—Economic theory II—The dynamic laws of distribution—Lectures and private reading. 2 hours, second half-year. Professor CLARK

11—Communistic and socialistic theories—Lectures and private reading. 2 hours, first half-year. Professor CLARK

12—Theories of social reform—Lectures and private reading. 2 hours, second half-year. Professor CLARK

14—Seminar in political economy and finance—For advanced students. 2 hours bi-weekly. Professors SELIGMAN and CLARK

Courses in Sociology and Statistics

16—Applied anthropology—Lectures and private reading. 2 hours. Dr. RIPLEY

17—Statistics and sociology—Lectures, illustrations, and private reading. 2 hours, first half-year. Professor MAYO-SMITH

18—Statistics and economics—Lectures and private reading. 2 hours, second half-year. Professor MAYO-SMITH. (Omitted in 1897–8).

19—Theory of statistics—Lectures and private reading. 2 hours, second half-year. Professor MAYO-SMITH

20—General sociology—Lectures and private reading. 2 hours, first half-year. Professor GIDDINGS

21—Progress and democracy—Lectures and private reading. 2 hours, second half-year. Professor GIDDINGS

22—Pauperism, poor laws, and charities—Lectures and private reading. 2 hours, first half-year. Professor GIDDINGS

23—Crime and penology—Lectures and private reading. 2 hours, second half-year. Professor GIDDINGS

24—Civil aspects of ecclesiastical organization—Lectures and private reading. First half-year. Dr. BAYLES

29—Work in the statistical laboratory—Exercises in analyzing, criticising, and tabulating statistics; in connection with Courses **17**, **18**, and **19**. 2 hours, bi-weekly. Professor MAYO-SMITH

30—Seminar in sociology and statistics—2 hours, bi-weekly. Professors GIDDINGS and MAYO-SMITH

Equipment

The library facilities are unexcelled. Every journal of importance, American or foreign, dealing with economics or social science, is taken regularly by the library. Any book needed by advanced students can usually be bought at once. The special library of history and political science comprises about sixty-five thousand volumes.

Students of economics and social science will find New York to be a centre of library facilities absolutely unrivalled elsewhere in this country. In addition to the University library, there are rich treasures at the New York Public Library on the Astor, Lenox, and Tilden foundation, New York Historical Library, Long Island Historical Library, Library of the Charity Organization Society, the Bar Association Library, and the Law Institute Library, to each of which students have access under favorable conditions. Advanced students also have at their disposal the library of the professor of Political Economy and Finance, which contains the most complete collection of works on political economy to be found in the United States.

The facilities offered to students of sociology include a large library of general and special works, and unusual opportunities for field work. A generous gift for works on sociology has provided a very complete equipment of publications on sociological theory, the history of the family, pauperism, crime, and penology. Arrangements have been made with the Charity Organization

Society, the University Settlement, the East-Side House, and the Brooklyn Bureau of Charities by which students can become fully acquainted with actual work among the people and with the most perfect methods.

Education

(See page 123)

Electrical Engineering

(See page 61)

ENGINEERING

Civil Engineering

WILLIAM HUBERT BURR, C.E. ..... *Professor*
ANDREW ERNEST FOYÉ, C.E. ..... *Instructor*
ADOLPH BLACK, C.E. ..... *Tutor*
CHARLES DERLETH, JR., C.E. ..... *Assistant*

The work in the department of Civil Engineering is designed to afford a thorough analytical training as well as numerous and extended practical exercises in those matters pertaining to the profession of the civil engineer, both in regard to all classes of structures and public works and in connection with the various developments and applications of power by the use of steam, electric, water, and air motors. This course is also designed to be an educational preparation for those duties or functions of an executive character, whose discharge in connection with the management of public or other works requires, or is rendered more efficient through, a thorough knowledge of civil engineering. The theoretical portion of the instruction is based largely upon the courses given in the departments of Mathematics, Mechanics, and Physics, and the results obtained are applied to practical engineering work. Special stress is laid upon the design by the student of the various structures and machines which the civil engineer is called upon to construct in the practice of his profession. The instruction is given by lectures, demonstrations by the student, and frequent conferences, co-ordinate with which the work of design is continuously carried on. It covers comprehensively the subjects of surveying, road and railroad engineering, water supply of cities and towns, irrigation, sanitary engineering, including sewage disposal; both graphic and analytic treatment of all metallic structures, foundations, retaining and reservoir walls, high masonry dams, sewer systems, hydraulic engineering, rivers and harbors, pumping engines, hydraulic, steam and electric motors.

Ample facilities are afforded for post-graduate students in civil engineering, and special students are admitted to the various engineering courses of the department upon evidence of proper qualifications.

Courses 1 to 17, inclusive, are required of all students in civil engineering. Courses 1, 5, 6, 15, 16, 17, are required of all students in mining engineering and metallurgy. Course 5 is required of all students in electrical engineering. All courses are open as electives to students who have had the requisite preparation to take them.

Courses

1—Theory of surveying—Pacing survey, contouring, and levelling by hand-level—Construction, use, and adjustment of instruments—Farm survey—Theory of stadia measurement—Azimuth traverse—Repetition traverse—Polaris observations—Balancing survey. Reference book: Johnson's *Theory of Surveying*. Mr. BLACK

2—Road engineering—Surveys and location of roads—Drainage and grades—Foundations—Selection and treatment of materials—Telford and McAdam pavements—City pavements of brick, Belgian and granite blocks, asphalt, cement, and concrete—Machinery and tools required in the construction of roads and pavements—Maintenance of roads and pavements—Elements of expense and total cost of construction and maintenance. Reference book: Byrne's *Highway Construction*. Lectures and recitations. 2 hours, first half of the second year. Mr. BLACK

3—Water-supply engineering and irrigation—Rainfall and storage—Flow of streams—Influence of soils, elevation, and geological character of water-shed—Methods of supply, gravitation, pumping from rivers or natural underground storage, flow from the latter—Reservoir construction—Sedimentation and filtration—Distributing system—House supply and wastage—Irrigation of land—Amounts and periods of application—Construction of and flow through division and distributing canals. Reference book: Fanning's *Water Supply* and Wilson's *Irrigation Engineering*. Lectures and recitations. 2 hours, second half of the second year. Mr. FOYÉ

4—Masonry structures—Pressure and abutting power of earth—Design and construction of retaining walls—Stability of masonry structures in general—Stability of towers and chimneys under wind pressure—Theory and design of arches with vertical and inclined loads—Theory and design of reservoir walls, earth and high masonry dams—Cement, concrete, and masonry. Reference books: Cain's *Retaining Walls* and Baker's *Masonry and Foundations*. 1 hour lectures, during third year, with frequent conferences and continuous work in design. 2½ hours of problem and design work are required in the drawing academy. Mr. FOYÉ

5—Elasticity and resistance of the materials of engineering—Laws of elasticity in homogeneous materials—Coefficients of elasticity—Relations between stresses and strains—Common and exact theories of torsion and flexure—Elastic limits, working stresses, and ultimate resistances of wrought-iron, cast-iron, steel, alloys, timbers, building-stones, cement, concrete, and masonry—Complete treatment of simple and continuous beams—The design and construction of iron, steel, and timber columns and beams, including the design and construction of plate girders—Shafts—Cables—Fatigue of materials—Specifications. 3 hours lectures and recitations during the first half and 2 hours during the second half of the third year. 7½ hours first half-year, and 5 hours second half-year of problem and design work, are required in the drawing academy. Reference and text-books: Burr's *Elasticity and Resistance of Materials*. Professor BURR and Mr. FOYÉ

6—Graphic statics—Equilibrium polygon, and polygonal frames for all systems of loads—Graphical representations of shears and moments for both non-continuous and continuous beams—Fixed and moving loads—Lines of influence—Applications to bridge and railway trusses. 2 hours lectures during the second half of the third year. 5 hours of problem and design work are required in the drawing academy. Mr. BLACK

7—Analytical theory of trusses—The truss element—Simple cantilever and non-continuous trusses with parallel chords—Fixed and moving loads—Through and deck spans—Positions of any system of concentrated moving loads for greatest chord and web stresses when chords are both parallel and not parallel—Combination of moment and graphic methods—Skew and irregular trusses—Applications to highway and railway trusses—Braced arches and arched ribs. 2 hours lectures during the second half of the third year, with frequent conferences and problems in computations of stresses and preparation of stress sheets. 5 hours of problem and design work are required in the drawing academy. Reference and text-book: Burr's *Stresses in Bridge and Railway Trusses*. Mr. BLACK

8—Sewage disposal — Treatment and disposal of sewage and refuse of manufacturing—Sedimentation by gravity and by chemical purification—Treatment of effluent by continuous and intermittent sand filtration—Fertilization—Intermittent application to soil with under-drainage—Disposal of sludge—Theory and construction of sand filters—Plants for sewage treatment—Pollution of potable water and its purification by continuous and intermittent sand filtration—Design of sand filter for water purification. 2 hours lectures first half of the third year. Professor BURR

9—Railroad engineering—Economics of location, operation, and maintenance—Equating grades and curves—Estimating quantities and writing specifications—Contracts—Track and switch work—Block and other systems of signalling—Buildings and structures—Organization. 3 hours lectures half of first half and all of the second half of the fourth year. Reference books: Wellington's *Railway Location* and Watman's *Track Construction and Maintenance*. Mr. FOYÉ

10—The design and construction of bridges, roofs, and buildings—Railway and highway bridges—Pin and riveted connections—Single and multiple systems of bracing—The design of details for bridges, roofs, and buildings—Floors for railway and highway bridges—The design and operation of drawbridges, including engines, locking, lifting, and turning machine—Cantilever structures—Wind loads and stresses—Single- and double-track viaducts or trestles in iron, steel, and timber—Lateral and transverse systems of bracing—The design and construction of elevated railroads—The complete designs of railway structures, with estimates of cost—The erection of iron, steel, and timber structures, including the cost of erection. 2 hours lectures and recitations, fourth year, with frequent conferences and continuous work in design. 5 hours of problem and design work are required in the drawing academy. Reference and text-book: Burr's *Stresses in Bridge and Railway Trusses*. Professor BURR and Mr. FOYÉ

11—Foundations—Earth foundations—Foundations for buildings—Safe loads on masonry and foundation beds—Pile driving and pile foundations—Safe loads for piles—Protection and preservation of piles and timber—Sheet piling and coffer-dam methods—Pneumatic foundations and caisson work—Open dredging—Bridge piers of masonry and cylinders—Piers for deep foundations—Methods of working in quicksands—Tunnelling. Reference books: Patton's *Foundations* and Baker's *Masonry and Foundations*. 2 hours lectures, fourth year, with frequent conferences and continuous work in design. 5 hours of problem and design work are required in the drawing academy. Professor BURR

12—Hydraulics—Flow of water through orifices—Time required for discharge of canal locks and similar volumes—Weir discharge and gauging by weirs—Gauging of water for systems of irrigation—Flow through and discharge of pipes—Design of pipe systems for city water-works—The Venturi meter—Flow in and discharge of open canals and rivers—Gauging of streams by current meters, floats, and other means—Backwater—Impulse of streams—The motion and flow of air and other gases in and through pipes and orifices. Reference book: Merriman's *Hydraulics*. 2 hours lectures during first half of fourth year, with frequent conferences and problems. Professor BURR and Mr. DERLETH

13—The design and construction of sewers and river and harbor improvements—Sewage and surface drainage of cities and towns—Separate and combined systems of sewers—Capacities of mains and branches—Catch basins—Manholes—Chimneys or ventilators—Flush tanks—Outfalls—Grades—Flow or discharge of sewers—Construction—Jetty system of river improvements—Scouring action of currents—Erosion of river banks—Dams for improvement of river navigation—Breakwater—Dykes—Groins—Buttress work—Docks—Harbor works—Iron piers—Estimates of cost. 2 hours lectures second half of the fourth year, with frequent conferences. Professor BURR

14—Theory of railroad surveying—Simple, compound, and reversed curves—Transition curves—Cross-section work—Earthwork computations—Office work. Lectures and practical problems. 1 hour, third year. Reference book: Searle's *Field Engineering*. Mr. FOYÉ

The Summer School of Surveying

This school is conducted during ten to twelve weeks of each summer vacation at a point in the country near Litchfield, Conn., where ample facilities are provided for all requisite operations, and where the topography is admirably adapted to the practical work of surveying. The operations at the summer school include the entire actual surveying of the department of Civil Engineering, together with such lectures, computations, and mapping as pertain to it. About six weeks' continuous attendance is required of each class between the first and second, and the second and third years, and four weeks between the third and fourth years. The school possesses an unusually full equipment of engineer's and solar transits, levels, plane tables, compasses, and all accessories and smaller instruments. A corps of special assistants for each session aid the regular officers of the school. At each session the following courses are given:

15—Surveying between the first and second years—Pacing, chaining, and ranging—Farm survey—Adjustment of instruments—Angle reading by repetition—Repetition by traverse—Azimuth traverse. Daily lectures, field and office work. Mr. BLACK

16—Surveying between the second and third years—Levelling—Topographical survey with plane table—City surveys—Contour sketching. Daily lectures, field and office work. Mr. FOYÉ

17—Surveying between the third and fourth years—Railroad surveying—Reconnaissance—Preliminary survey—Location—Cross-sectioning—Computations—A complete survey and location of a line two to five miles long are made with all the attendant computations requisite for placing the work under contract. Daily lectures, field and office work. Mr. FOYÉ

A satisfactory project or thesis is required of every candidate for the degree of civil engineer at graduation.

Electrical Engineering

FRANCIS B. CROCKER, E.M., Ph.D.....*Professor*
GEORGE FRANCIS SEVER.....*Instructor*
SAMUEL G. F. TOWNSEND, A.B., E.E.....*Assistant*

Of the courses offered by this department, Courses **2, 3, 8, 11, 12, 21,** and **22** are required of fourth-year students, candidates for the degree of electrical engineer; Courses **1, 4, 6,** and **10,** of third-year students, candidates for the degree of electrical engineer; Course **5** of third-year students, candidates for the degrees of mining engineer, civil engineer, and metallurgical engineer; Course **3** of fourth-year students, candidates for the degree of bachelor of science (chemistry); and Course **7** of second-year students, candidates for the degree of electrical engineer. Courses **13** to **20** inclusive are elective for candidates for the degrees of master of arts and doctor of philosophy.

The theoretical side of electrical engineering is treated by lectures delivered by Professor PUPIN and Mr. FREEDMAN in the department of Mechanics, under which head the various courses will be found.

See Mechanics **6, 7, 8, 9, 14, 15,** and **18.**

Courses

1—Dynamo and motor practice—Principles, construction, operation, and design of dynamos and electric motors. Text-book: Crocker's *Electric Lighting*. Vol. I. 3 hours, first half-year. Professor CROCKER and Mr. SEVER

2—Electric power—Transmission and distribution of electric power, including the principles and applications of the direct-current, single-phase and polyphase systems. 3 hours, first half-year. Professor CROCKER

3—Electrical engineering—Electrochemistry and electrometallurgy; including theory and applications of electrolysis and electrical heating; theory and practice of primary and secondary batteries; production, separation, and purification of metals and chemicals. 1 hour. Professor CROCKER

4—Electric lighting—The design, installation, and operation of electric-lighting systems and plants, including a discussion of each of the various elements and methods employed. Text-book : Crocker's *Electric Lighting*. 3 hours, second half-year. Professor CROCKER

5—Electrical engineering—The principles of electrical engineering and their application to general engineering. 1 hour lecture and 1 afternoon laboratory work, second half-year. Professor CROCKER

6—Electrical engineering—Telegraphy and Telephony. Text-books : Pope's *Modern Practice of the Electric Telegraph ; Practical Telephone Hand-book*, Webb. 1 hour. Professor CROCKER and Mr. FREEDMAN

7—Elements of electrical engineering—General electrical principles, laws, measurements, and the introduction to their applications, including the elements of the dynamo. Text-book : *Elementary Lessons in Electricity and Magnetism*, Thompson. 1 hour, first half-year, 2 hours, second half-year. Professor CROCKER and Mr. FREEDMAN

8—Electric railway—Special instruction in design, installation, and operation of the various systems of electric railways. 2 hours, second half-year. Mr. SEVER

10—Electrical engineering laboratory.

1. Practice in the accurate use of volt meters and ammeters for the measurements of E. M. F.'s currents and resistances.

2. Study and examination of a dynamo and motor.

3. Direct-current dynamos and motors.

(*a*) Measurement of the resistances of the various electrical circuits in a dynamo. Comparison of methods. Insulation tests—Determination of the heating limit under full-load conditions. Operation of various kinds of dynamos and motors—Investigation and measurement of Counter E. M. F., in a motor.

(*b*) Determination of the efficiency of dynamos and motors by the use of transmission dynamometers and friction brakes—Use of electrical methods for the determination of the efficiencies of motors, dynamos, and motor-dynamos. Comparison of methods.

(*c*) Determination and plotting of the various characteristic curves of dynamos and motors, shunt, series, compound, and differential.

(*d*) Operation of the steam-engine and use of the steam-engine indicator in determining power of dynamos.

(*e*) Detecting and locating faults in dynamos and motors. 2 afternoons. Mr. SEVER

11—Electrical engineering laboratory.

1. Practice in alternating current measurement with commercial instruments.

2. Alternating-current dynamos, motors, and transformers.

(*a*) Measurement of ohmic resistances.

Tests of insulation resistance. Measurement of heating limit.

(*b*) Determination by various methods of the efficiency of transformers. Determination of the values of the different losses.

(*c*) Determination and plotting of the characteristic curves and alternating current and potential waves.

(*d*) Operation of alternating-current dynamos and motors. Determination of the characteristics of alternating-current motors. Brake and efficiency tests.

(*e*) Detecting and locating faults in alternating-current dynamos, motors and transformers. 2 afternoons, first half-year. Mr. SEVER

12—Electrical engineering laboratory.

Calibration of commercial measuring instruments, and advanced electrical measurements, including self-induction, capacity, and magnetic measurements as follows:

1. Construction of a cell from pure chemicals to be used as a standard of E. M. F.

2. Calibration of Kelvin Balance.

3. By comparison with a Kelvin Balance, the calibration of, (*a*) an ammeter, (*b*) a Siemens dynamometer.

4. Calibration of a volt-meter.

5. Determination of the constant of a watt-hour-meter.

6. Measurements of inductance and capacity. (*a*) Comparison of inductances. (*b*) Determination of a coefficient of self-induction, (*c*) Comparison of capacities. (*d*) Absolute determination of a capacity.

7. Magnetic measurements. (*a*) Measurements relating to the magnetic leakage of a dynamo or motor. (*b*) Determination of permeability of samples of iron or steel. (*c*) Measurement of hysteresis of samples of iron or steel. 1 afternoon, first half-year. Mr. FREEDMAN.

13 to 20—Conference, problem, and design work in connection with advanced electrical engineering, including long-distance transmission of power, special forms of dynamos, motors, and the like.

21—Electrical engineering laboratory.

1. Storage battery testing, including determination of the efficiency, output, and variations of potential at different rates of charge and discharge.

2. Photometry of electric lamps, including determinations of maximum and mean candle power of the various forms of arc and incandescent lamps.

3. Adjustment and operation of telegraph, telephone, and electrical signalling apparatus.

4. Practice and the use of electric welding apparatus. 1 afternoon, first half-year.

22—Management of electrical plants. Economy in the design, construction, and operation of electrical stations, plants, and factories. Organization, administration, accounts, specifications, contracts, laws and insurance rules, accidents, patents, and statistics in relation to electrical work. 3 hours, second half-year. Professor CROCKER

Equipment

The offices, laboratories, lecture, and other rooms of the Electrical Engineering department are in the south end of the Engineering Building, at the new site of the University. In the sub-basement are located the storage battery and

photometer rooms. The former contains a battery of 70 cells, which is used for efficiency and output tests, and also as a source of steady potential and current. The photometer room is equipped with all necessary apparatus for determining the candle power of arc and incandescent lamps as well as other sources of light. In the basement are situated the two machine laboratories, the larger being occupied by the direct-current machinery, while the smaller contains the alternating-current apparatus. In the former a 50 H. P., high-speed steam engine drives two lines of shafting carrying pulleys controlled by friction clutches, to which the various machines are belted. The arrangement of the engine and shaft is such that two dynamos of 30 kilowatts each can be connected to the engine, or either dynamo may be used as a motor to drive the line shaft, the current being obtained from the electric light and power plant of the University. In this way the breaking down of the motive power is rendered almost impossible, and an excellent demonstration of the two methods of driving is made.

The various dynamos which are belted to the line shafts include examples of 115, 230, and 500 volt constant potential generators, constant current arc-lighting dynamos, and other typical machines. Several types of stationary and railway motors, as well as motor-dynamos, are also placed in this room. Machine and hand tools are provided in one corner of this laboratory for making and repairing apparatus, attachments, and the like. Complete sets of ampere- and volt-meters, speed indicators, transmission and absorption dynamometers, are provided for testing the various dynamos and motors.

In the other machinery laboratory, the alternating-current apparatus is placed, including single-phase and polyphase generators, induction and synchronous motors, and various types and sizes of transformers. Complete sets of alternating-current measuring instruments and wave-tracing apparatus are also provided.

On the first floor are situated the smaller lecture room (seating 70), ordinarily used for class work, and the larger lecture room (seating 150) for combined classes. In Havemeyer Hall, immediately adjoining, a still larger lecture room (seating 350) is available for meetings and public lectures. All of these rooms are provided with an ample supply of electrical energy of different forms, as well as gas, water, and other facilities, to enable experimental demonstrations to be conveniently and effectively performed. For example, dynamos, motors, and other apparatus of practical size are shown in actual operation to illustrate the lectures, this being made a special feature of the instruction.

The museum contains cases for the collection of apparatus, models, and materials relating to electrical engineering. This museum adjoins the lecture rooms, so that its contents can be conveniently used for illustrating the lectures.

On the third floor are located the large instrumental laboratory, the research room, and the studies of the officers. The laboratory contains a number of tables on which the instruments are permanently set up ready for use. These include various forms of galvanometers, ampere balances, standard cells, and resistances; apparatus for measuring magnetic permeability, hysteresis, and leakage; laboratory standard volt and amperemeters; telegraph, telephone, and electric-signaling systems; thermoelectric and electrical heating devices; Roentgen ray apparatus. The research room is used for special post-graduate and thesis work, and is fitted up according to the lines of investigation that are being followed.

A most important facility is the large and reliable supply of electrical current which is afforded by the central power plant of the University. This consists of boilers having an aggregate capacity of 2000 H. P., two low-speed engines directly connected to two dynamos of 275 H. P. each, and two high-speed engines directly connected to two dynamos of 100 H. P. each. This electrical generating plant, having a total capacity of 750 H. P., and illustrating the latest practice in electrical engineering, furnishes current for electric lighting and for driving the motors and fans used in ventilating all of the buildings. Special conductors are also laid to furnish the various laboratories and lecture rooms of the Electrical Engineering department with an ample supply of current for experimental work.

Mechanical Engineering

FREDERIC R. HUTTON, C.E., Ph.D.....*Professor*
RALPH E. MAYER, C.E.....*Instructor*
IRA H. WOOLSON, E.M.....*Instructor*
THOMAS H. HARRINGTON, C.E.....*Assistant*
FREDERICK M. HOLBROOK, E.E.....*Assistant*
CHARLES P. BENNS, M.E.....*Instructor in the Teachers College*
EDWIN A. FINCH.....*Instructor in the Teachers College*

Special students are admitted to the courses for which previous training may have fitted them. All courses intended for undergraduates in the Schools of Applied Science may be pursued by graduates of those or other schools of like grade and standing as graduates' courses, the instruction for such persons being carried further in specialization than the time available permits to candidates for undergraduate degrees. The instruction for such advanced students will be by prescribed reading, by problems assigned, and by work in the mechanical laboratories under individual instruction. These supplementary courses will vary in difficulty with the amount of time necessary according to the needs of the individual and the subject. Experimental investigation is a special feature of such work in Courses **10** to **17**, **19**, **24**, and **25**.

Courses

1—Elementary mechanical drawing—Use of instruments, elementary projections, descriptive geometry, graphics, and stereotomy. 2 hours lectures and 5 hours drawing academy, first year; 2 hours lectures and 5 hours drawing academy, second year. Messrs. MAYER and HARRINGTON

2—Specialized engineering drawing—Topographical and geological charts and maps; working and isometric drawing of machinery, furnaces, and structural work. Tracing and blue printing, and shop drawings. 2 hours lectures, 5 hours drawing academy, second year. Messrs. MAYER and HARRINGTON

3 and **4**—First-year shop-work—Carpentry, framing, and joinery, first half-year; wood-turning, pattern-making, moulding, and foundry-work, second half-year. 1 hour conference for instruction, and 2 afternoons shop-practice in shops of the Teachers College. Mr. FINCH

5—First-summer shop-work—Pattern-making and foundry-work. 100 hours in 3 weeks in June.

6 and 7—Second-year shop-work—Forging and blacksmith work, swaging, welding, and tempering, first half-year; pipe-fitting, bench-work, chipping, filing, tapping, and threading, and assembling, erection, and riggers' work with heavy masses; machine-tool work at lathe, planer, shaper, slotter, and milling-machine, second half-year. 1 hour conference for instruction, 3 afternoons and Saturday mornings shop-practice in shops of the Teachers College. Mr. BENNS

8 and 9—Second-summer shop-work—Machine-tool work at lathe, planer, shaper, slotter, and milling-machine. 100 hours in 3 weeks in June.

10—Properties of materials and alloys—Fabrication and mechanical treatment of iron, steel, and alloys; ingot metals, steel castings, their composition, and their properties; rustless coatings, engineers' inspections, properties of alloys—General characteristics of timber for engineering uses; inspection of lumber and timber; preservative processes; methods of testing materials. 2 hours, second year. Professor HUTTON and Mr. WOOLSON

11—Engineering of power plants—Steam-engines and their mechanisms, rotary engines, the single-acting engine, the mechanical features and construction of the condensing, compound, and multiple-expansion engines. 1 hour lecture with recitation, second half-year. Professor HUTTON

12—The steam-engine and its accessories—The power plant continued—Engine valve-gear, details of construction, erection, and setting, piping, accessories, and repairs. 2 hours lectures and recitations, first half-year. Professor HUTTON

13—The steam boiler and its accessories—The power plant concluded—Typical forms, construction, accessories, wear and tear, repairs, tests, inspection, operation, and control. 2 hours lectures with recitations, second half-year. Professor HUTTON

14—Management and tests of boilers—Laboratory and power-house practice, arranged at convenience, by squads of students.

15—Operation and tests of engines—Laboratory and power-house practice, arranged at convenience of instructors and students.

16—Testing materials of engineering—Clinical conferences and work in the laboratory with testing machines upon tensile, transverse, compressive, torsional, and other resistances of structural, and other materials. Afternoon hours, alternating with mechanical and electrical laboratories and drawing-rooms. Messrs. WOOLSON and HOLBROOK

17—Mechanical engineering laboratory—Calibration of indicators, tests of gauges, standardization of dynamometers, tests of efficiency of mechanisms and losses in transmission of power. Afternoon hours, alternating with testing and electrical laboratories and drawing-room. Messrs. WOOLSON and HOLBROOK

18—Machinery and mechanism—Motion, velocity, transmissive principles, conversion of motion, teeth of wheels, general mechanism. 2 hours lectures and recitations. Professor HUTTON and Mr. WOOLSON

19—Heat and its applications—Fuels for motive power, combustion, transfer of heat, heating surface, generation of steam, chimneys, artificial draft, smoke prevention, use of steam in engines, super-heating ; gas- and air-engines, combined vapor engines, ammonia and other vapor engines, air-compressors, refrigerating machinery. 2 hours lectures and recitations. Professor HUTTON

20—Motors other than steam—Animal, water, wind, and wave motors ; turbines. 1 hour lecture, second half-year. Professor HUTTON

21—Dynamics of motors—Work of motors, dynamometers, governors, regulators, inertia, friction, and efficiency. 1 hour lecture, second half-year. Professor HUTTON

22—Machine design and drawing—Graphic statics of mechanism, proportion of parts of machines, shop and working drawings. 1 hour, first half-year, and afternoon work in drawing-room. (To be assigned.)

23—Valve-gearing for engines—Common valve-gear, polar diagram design, link-motions, cam-gears ; variable cut-off mechanisms. 1 hour, and afternoon work in drawing-room. (To be assigned.)

24—Heat and steam engineering laboratory—Tests upon the experimental steam-engine and air-compressor and air-engines ; indicator and dynamometer work ; determinations of heat units and water consumption, from theory and experiment. Afternoon hours, alternating with hydraulic and electrical laboratories and thesis work. (To be assigned.)

25—Hydraulic engineering and motors laboratory—Verification of hydraulic formulæ for friction and efflux ; tests of motors and hydraulic machines. Afternoon hours, alternating with mechanical and electrical laboratories and thesis work. (To be assigned.)

26—Railway motive power and machinery—Types of locomotive engine, boiler, mechanism, running gear, compound locomotives, design and performance in hauling loads ; accessory features to the motive power ; railway machinery. 3 hours lectures, first part of first half-year. Professor HUTTON

27—Pumps, pumping, and special engines—Construction, mechanisms, designs, types, valves, erection, management, efficiency, duty ; special forms of steam-engine for special duty. Special course of lectures, second part of first half-year. Professor HUTTON

28—Steam-engine design and advanced drawing. 2 hours. (To be assigned.)

29—Shop and factory organization and management. 1 hour lecture. (To be assigned.)

30—Work-shop economics and specifications—Cost of manufacture, shop accounts, wage systems ; specifications for economical manufacture. 1 hour lecture. (To be assigned.)

31—Marine engine design. (To be organized.)

32—Naval architecture. (To be organized.)

33—Ship-building. (To be organized.)

34—Marine auxiliaries. (To be organized.)

35—Vacation class in mechanical engineering—During the latter half of the school year visits are made to shops, factories, iron and steel works, and pumping stations, for the study of practice in these lines. The time occupied is variable according to circumstances. The instruction is conducted by Professor HUTTON and Messrs. WOOLSON and HOLBROOK. *Optional*

36—Summer work between first and second years—Memoir or drawings.

37—Summer work between second and third years—Memoir or drawings.

38—Summer work between third and fourth years—Memoir, test, report, or special laboratory work as may be directed in each case by the professor of Mechanical Engineering.

39—Graduation thesis.

Equipment

The department of Mechanical Engineering has its own special equipment, and also enjoys the admirable and complete equipment of other departments for the use of its students.

THE WORKSHOPS are located in the Macy Manual Arts Building of the Teachers College, 120th Street. For wood-working there are twenty carpenter's benches with their kits of tools, and for pattern-making and turning there are twenty speed-lathes, the usual saw benches and planers. For forge and blacksmith work there are twenty Buffalo forges with anvils and tools. For metal-working there are eleven engine-lathes with swing from twelve inches to twenty inches, planers, shapers, drill-presses, and a universal milling-machine. The department has also a specially fine expert's lathe, the gift of friends to the University, with unusual attachments in the way of chucks, dividing head, and the like, and a complete outfit of tools for construction, pipe-fitting, and repair.

THE MECHANICAL LABORATORIES properly so called are located in the great vault area north of the Engineering Building and beneath the esplanade in front of Havemeyer Hall. Their area exceeds 7100 square feet, giving a length of over 210 feet and a width of 32 and 35 feet. The three subdivisions are respectively, The testing laboratory, The steam and motive power engineering laboratory, and The hydraulic motors laboratory.

THE TESTING LABORATORY, occupying an area of 64 by 32 feet at the west end of the laboratory space, is equipped with high-grade testing machines for tensile, transverse, torsion, and compression tests. Their designs are of divers types to give wide experience in handling, and they are fitted with the best and newest appliances for observing and recording deformations of test-pieces. The Emery testing machine of 150,000 pounds capacity is a marvel of accuracy and sensitiveness, and is used as a standard of reference. Others of 50,000 pounds and 100,000 pounds capacity respectively are of the usual commercial types,

and include Keep's series. Practical and scientific tests and investigations, such as arise in a great industrial centre like New York City, are continually in progress at the side of the work of students.

THE STEAM AND MOTIVE POWER ENGINEERING LABORATORY occupies an area of 84 by 35 feet in the centre of the great laboratory space, and has been made a memorial to the late Edward P. Allis by the gift of the principal features of its equipment through Mr. William W. Allis of Milwaukee. It contains a triple-expansion Reynolds or Allis-Corliss steam-engine of 150 horse power, which is the source of motive power for the other machinery, and is fitted with complete apparatus for condensing and weighing the steam used in tests. In addition this engine by a simple change can be coupled to additional air-cylinders and thus will be transformed into a three-stage air-compressor, fitted to compress air to 250 pounds pressure into proper storage reservoirs, thus permitting the engine to be converted into an experimental steam-engine of widest range of speed condition and capacity for test. The stored air, moreover, can be expended in a third engine, thus completing the cycle of transformations of energy. A two-stage or compound steam air-compressor has also been presented to the laboratory by the Ingersoll-Sergeant Drill Company, having a capacity in the steam-engine of about 40 horse power and compressing air to 100 pounds pressure.

The machinery of transmission in this section, and which carries power to the two other divisions, is a gift to the University from the Dodge Manufacturing Company of Mishawaka, Ind., and presents the American system of rope-driving from the engine shaft to the first or jack shaft, from which by clutches and quarter-twist transmissions the full power of the engine can be distributed to the continuous line shaft upon the southerly wall, from which the lighter powers are taken off to testing machines and other apparatus. Beside the steam-engines are gas-engines of the Otto type, a Hornsby-Akroyd oil-engine, hot-air or caloric engines of the Ericsson and Ryder type, and small steam motors specially fitted for test and experiment, such as the Westinghouse and N. Y. Safety Power Co.'s designs, and certain forms of pump. Wheeler surface condensing appliances in connection with the necessary tanks and reservoirs enable steam consumption to be measured by direct weighing. A 10 horse power De Laval steam turbine, running at the phenomenal speed of 25,000 revolutions per minute, has recently been added, and a special boiler for carrying higher pressures than usual. A full line of boiler feed injectors is mounted for display and experiment. This laboratory is also well supplied with dynamometers both of the transmission and absorption types, oil-testing appliances, speed recorders, tachometers, anemometers, test-gauges, calorimeters, pyrometers, weighing and measuring appliances, indicators, and the appliances for standardizing and calibrating such apparatus. A fine glass mercury column with a height of 100 feet is to be installed in the elevator shaft when the latter is ready. The hydraulic elevator in the Engineering Building is to be made by the gift of Otis Bros. a piece of laboratory apparatus of unique value by being fitted with special facilities for the study of the mechanics and problems of hoisting. The ventilating machinery of the laboratory is also specially adapted for experiment and test in pneumatics by calibrated orifices, gauges, and similar appliances.

THE POWER PLANT of the University is also a very significant part of its mechanical equipment. The units which drive the electric generators are respectively of 300 horse power low speed and 150 horse power each high speed and are in duplicate. The boiler plant is of 1600 horse power capacity, with mechanical coal-handling appliances in great perfection. There is also extensive ventilating machinery and a refrigerating plant available for study and experiment.

Students are expected to learn the actual detail of boiler-firing and engine-running by serving as helpers in the power-house as a feature of their laboratory work. The metallurgical collection also furnishes pyrometers, calorimeters, and other apparatus for heat determinations.

THE HYDRAULIC MOTORS LABORATORY, occupying a space 67 feet long and 32 feet wide at the east end of the laboratory area, has been made a memorial gift by Mr. Charles C. Worthington and is known as the Henry R. Worthington laboratory. It has great tanks below the floor level of 4000 and 5000 gallons capacity, which supply the pumping machinery, and into which the motors discharge. The first pumping engine is of the duplex triple-expansion low-pressure type, having a capacity of 1000 to 1500 gallons per minute against a head of 50 pounds pressure. The second pump will deliver against 1000 pounds pressure with accumulator, and the third has the unique capacity for delivering water at 5000 pounds pressure per square inch. The first delivers into a closed steel tank within which a pressure of constant but controllable head will be maintained by air pressure from the compressors. The accumulators are of the steam design. Meters, weirs, standard gauges, measuring appliances, and the like complete the outfit. An 8-inch Venturi meter, the gift of the Builders' Iron Foundry of Providence, hydraulic rams, the gift of the Douglas Manufacturing Co., and of the Rife Hydraulic Engine Co., impulse water-wheels of Pelton and Cazin, type and a Leffel turbine have been recently supplemented by two large-capacity centrifugal pumping machines. One is the gift of the Morris Machine Co., and has its directly coupled engine, and the other is the gift of the Lawrence Machine Co., through Mr. William O. Webber of Boston. Other motors will be added as circumstances permit. The work in this laboratory is also strengthened by the work done in the laboratory of the department of Civil Engineering, covering flow of water in pipes and channels, weir experiments, meter testing, and the like.

THE DRAWING ACADEMIES are splendidly lighted and of very large extent, and are fitted not only with the best forms of drawing tables and furniture, but also with extensive collections of patterns, models, and illustrative drawings, blue prints, photographs, and prints which are useful both as copies, and for training in design. Sectional models of actual machines and structural material are abundant, and for the study of projection, stone-cutting, and warped surfaces, an unexcelled collection is at the service of students. A set of the Ollivier models, in which the elements of surfaces are represented by tense-threads, is a notable feature of these collections. In connection with the drawing academy is a room for blue printing and other solar work, and a photographic dark room.

THE CABINETS OR MUSEUM COLLECTIONS of mechanical engineering exhibit

not only models of mechanical movements, mechanisms, and gearing, but are specially rich in material which has failed in service and under stress. Some of this material is unique, and serves a most useful purpose. Specimens of apparatus and materials of practice are also abundant.

LECTURE AND CLASS-ROOM ILLUSTRATION is effected by extensive use of material from the collections and of photographs exhibited as lantern-slides by projection in an illuminated room, by drawings and blue prints, and by electrotype prints and wall-diagrams. Great service is made also of type-written monographs and notes manifolded and distributed to the students.

Summer and Vacation Work

To derive the advantages possible from continuous work in the shop, two summer classes are maintained, each covering about one hundred working hours, from commencement week until the first of July. If necessary another similar term will be arranged for September. These form parts of the regular shop-work course of Mechanical Engineering, but are also intended to permit students from other schools, where these facilities are lacking, to comply with the requirements of the regular course by extra application and overtime work.

During the session, and on occasional holidays, students are given opportunities to visit engineering works, machine shops, factories, and industrial establishments in the city and its environs. More elaborate excursions are arranged for the latter years to special places or districts, under the supervision of the professors or instructors. The summer between third and fourth year is intended to be specially used for work in connection with the final thesis, or in tests, or in actual running of machinery.

ENGLISH

English Language and Literature

THOMAS RANDOLPH PRICE, M.A., LL.D.....*Professor*
ABRAHAM VALENTINE WILLIAMS JACKSON, Ph.D.....*Professor*
GEORGE EDWARD WOODBERRY, A.B.....*Professor*
BRANDER MATTHEWS, A.M., LL.B.....*Professor*

Courses **2**, **3**, **4**, **11**, **12**, **13**, **14**, **15**, and **17** are open to seniors in Columbia College and to university students. They are intended for candidates for the degree of bachelor of arts, and may not be counted by themselves towards the degree of master of arts or doctor of philosophy.

Course **6** is open to graduates only.

Courses **3**, **4**, **5**, **6**, **7**, **8**, **10**, **14**, **15**, and **17** are open to women on the same terms as to men.

Women wishing to enter any of the courses as special students or as candidates for a degree must register through Barnard College.

Courses **3**, **4**, **5**, **6**, **7**, **8**, **10**, **15**, and **17** are open to auditors.

Courses

2—Anglo-Saxon language and historical English grammar. 2 hours. Professor JACKSON

3—Anglo-Saxon literature—poetry and prose. 2 hours. Professor PRICE

4—Chaucer—language, versification, and method of narrative poetry. 2 hours. Professor PRICE

5—English language and literature of the eleventh, twelfth, and thirteenth centuries—Reading of authors, with investigation of special questions and writing of essays. Professor PRICE

Not given in 1897–98.

6—English language and literature of the fourteenth century exclusive of Chaucer, and of the fifteenth century—Reading of authors, with investigation of special questions and writing of essays. 2 hours. Professor PRICE

7—English language and literature of the sixteenth century—Reading of authors, with investigation of special questions and writing of essays. 2 hours. Professor PRICE

Not given in 1897–98.

Courses **5**, **6**, and **7**, designed for the careful study of the language and literature of early and middle English periods, will be given successively in 1897–98, 1898–99, and 1899–1900.

8—Anglo-Saxon prose and historical English syntax. Text: Prose in Sweet, Bright, and Grein. Investigation of special questions and writing of essays. Professor PRICE

Not given in 1897–98.

10—English verse forms—Study of their historical development. 2 hours. Professor PRICE

11—The history of English literature from 1789 to the death of Tennyson—Lectures. 3 hours. Professor WOODBERRY

Not given in 1897–98.

12—The history of English literature from 1660 to 1789—Lectures. 3 hours. Professor WOODBERRY

Not given in 1897–98.

13—The history of English literature from the birth of Shakspere to 1660, with special attention to the origin of the drama in England and to the poems of Spenser and Milton. 3 hours. Professors JACKSON and WOODBERRY.

Courses **12** and **13** are given in alternate years.

14—Pope—Language, versification, and poetical method. Text: Ward's edition of Pope's Works. 2 hours. Professor PRICE

Not given in 1897–98.

15—Shakspere—Language, versification, and method of dramatic poetry. Text: Cambridge text of Shakspere. 2 hours. Professor PRICE

Not given in 1897–98

16—American literature. 2 hours. Professor BRANDER MATTHEWS

English **16** and Literature **1** will be given in alternate years.

17—The poetry, lyrical, narrative, and dramatic, of Tennyson, Browning, and Arnold. 2 hours. Professor PRICE

Literature

GEORGE EDWARD WOODBERRY, A.B.....*Professor*
BRANDER MATTHEWS, A.M., LL.B.....*Professor*
GEORGE RICE CARPENTER, A.B.....*Professor*
HENRY OSBORN TAYLOR, A.B., LL.B.....*Lecturer*
SAMUEL SWAYZE SEWARD, Jr., A.M.....*Assistant*

Courses **1** and **2** are open to seniors in Columbia College and to university students. They may not be counted for the degree of master of arts or doctor of philosophy. The remaining courses are open only to students who have taken the degree of bachelor of arts or its equivalent.

Courses **7, 8, 9** are open to women who are candidates for the degree of master of arts or doctor of philosophy.

Courses

1—The history of modern fiction. 2 hours. Professor BRANDER MATTHEWS

Literature **1** and English **16** will be given in alternate years.

Given in 1898–99 and each alternate year thereafter.

2—The theory, history, and practice of criticism, with special attention to Aristotle, Boileau, Lessing, and English and later French writers, with a study of the great works of the imagination. 3 hours. Professor WOODBERRY

3—Epochs of the drama—Greek, Latin, Spanish, English, French, German, Scandinavian. 2 hours. Professor BRANDER MATTHEWS

Alternates with Course 4.

Given in 1897–98 and each alternate year thereafter.

4—Dramatists of the nineteenth century. 2 hours. Professor BRANDER MATTHEWS

Not given in 1897–98.

5—Molière and English comedy. 1 hour. Professor BRANDER MATTHEWS

Alternates with Course 6.

Given in 1897–98 and each alternate year thereafter.

6—The evolution of the essay. 1 hour. Professor BRANDER MATTHEWS

Given in 1898–99 and each alternate year thereafter.

7—Studies in literature, mainly critical—selected works, in prose and verse, illustrating the character and development of national literatures—Lectures. 3 hours. In 1897–98 the periods of Hellenism and of the English Renaissance will be specially studied. The course involves much collateral reading of minor authors and of history. Professor WOODBERRY and Mr. TAYLOR

Open to university students and to auditors.

8—Studies in literature, mainly historical; subjects for 1897–98: the mediæval epic; the English romances—Conferences. 3 hours. This course is in part one of research. Professor WOODBERRY and Mr. TAYLOR

Open to university students and to auditors.

Courses 7 and 8 may each be taken for two successive years.

9—Types of mediæval and Renaissance literature. Traces the development of lyric poetry in the more important literatures of the middle ages. Students who elect this course are recommended to consult the instructor in advance as to the best disposition of their summer reading in preparation for it. 3 hours. Professor G. R. CARPENTER

Open to university students and to auditors.

Seminar. Professor WOODBERRY

Open to university students and to auditors who have taken Courses 7, 8, and 9.

Rhetoric and English Composition

GEORGE RICE CARPENTER, A.B.....*Professor*
* WILLIAM TENNEY BREWSTER, A.M.....*Tutor*
GEORGE C. D. ODELL, Ph.D.....*Tutor*
RALPH CURTIS RINGWALT, A.B.....*Assistant*
ALFRED LOUIS KROEBER, A.M.....*Assistant*
PHILIP ERNEST BRODT, A.B.....*Assistant*

Courses

A—Rhetoric and English composition—Carpenter's *Exercises in Rhetoric and English, Composition*. Recitations, weekly themes; in the second half-year lectures on certain English and American authors as models of style. 3 hours. Professor G. R. CARPENTER, Dr. ODELL, Mr. KROEBER, and Mr. BRODT

Prescribed for freshmen in the College.

B—Practice in various kinds of English composition—Fletcher's *Introduction to Theme-Writing*. Fortnightly essays, lectures, and consultations. 1 hour. Dr. ODELL, Mr. KROEBER, and Mr. BRODT

Prescribed for sophomores in the College. Pre-requisite: Course A.

C—Argumentative composition—Four essays, consultations. Mr. RINGWALT and Mr. BRODT

Prescribed for juniors in the College. Pre-requisite: Course B.

1—English composition—Daily themes and fortnightly essays, lectures, and consultations. 3 hours, first half-year. Professor G. R. CARPENTER

Open as an elective to juniors and seniors in the College. Pre-requisite: Course B.

2—English composition—Lectures and discussions with regard to style; essays and other written work. 3 hours, second half-year. Professor G. R. CARPENTER

Open as an elective to juniors and seniors in the College. Pre-requisite: Course 1.

* Absent on leave.

3—English composition (advanced course)—The structure of the thesis; the history of rhetoric; methods of teaching rhetoric and English composition. 2 hours. Professor G. R. CARPENTER

Open as an elective to students who have taken Course 2 or its equivalent.

4—Elocution—Lectures and exercises. 2 hours. Mr. RINGWALT

Open to sophomores, juniors, and seniors in the College.

5—The art of English versification—1 hour. Professor BRANDER MATTHEWS

Open to seniors in the College and to university students.

6—Argumentative composition—Lectures, briefs, essays, and oral discussions. 3 hours, counting as a two-hour course. Mr. RINGWALT

Open to students who have passed in Course B with a grade of at least C.

French

(See page 132)

Genito-Urinary and Venereal Diseases

ROBERT W. TAYLOR, M.D.....*Clinical Professor*
JAMES R. HAYDEN, M.D.....*Chief of Clinic*
WILLIAM C. GILLEY, M.D.....*Clinical Assistant*
EDMOND Y. HILL, M.D.....*Clinical Assistant*
JOHN B. STEIN, M.D.....*Clinical Assistant*
E. L. WILLIAMSON, M.D.....*Clinical Assistant*
W. B. BROUNER, M.D.....*Clinical Assistant*
C. C. RATHBONE, M.D.....*Clinical Assistant*
W. D. TRENWITH, M.D.....*Clinical Assistant*

Courses

1—Venereal and genito-urinary diseases—Clinical lectures at the Vanderbilt Clinic. 1 hour. Professor TAYLOR

Required, in the third year, of candidates for the degree of M.D.

2—Practical instruction at the Vanderbilt Clinic in the diagnosis and treatment of venereal and genito-urinary diseases—12 lessons for each student. Dr. HAYDEN

Required, in the third year, of candidates for the degree of M.D.

3—Hospital clinics in venereal and genito-urinary diseases—Bellevue Hospital, Tu. at 2.30 P.M. throughout the academic year. Professor TAYLOR. City Hospital, Blackwell's Island (formerly Charity Hospital), W. at 2 P.M., for two months of the academic year. Dr. HAYDEN

The Bellevue Hospital clinics are optional in the third and fourth years for candidates for the degree of M.D.

Geology

JAMES FURMAN KEMP, A.B., E.M. ..... *Professor*
ALEXIS ANASTAY JULIEN, Ph.D. ..... *Instructor in Geology and Curator*
ARTHUR HOLLICK, Ph.B. ..... *Tutor*
GILBERT VAN INGEN ..... *Curator of the Geological Collections*

Courses

1—General geology—First half-year, physical geology, with practical work in the rock collections under the lithological part of the subject; second half-year, stratigraphical and historical geology, involving laboratory work with type fossils and collections illustrating the geology of the United States. Text-book: Le Conte's *Elements of Geology*. 2 hours lectures, including laboratory work. Mr. HOLLICK

Elective for juniors and seniors in the College.

2—General geology—A more elaborate discussion of the subjects treated in Course 1. Text-books: Scott's *Introduction to Geology*, Kemp's *Handbook of Rocks*. 3 hours lectures. Professor KEMP

Required of all third-year students in the Schools of Mines and of Civil Engineering; during 1897-98, of second-year students in the School of Mines. Elective for seniors in the College who have not had Course 1.

3—Economic geology—First half-year, discussion of the general features and formation of ore bodies, followed by a description of the deposits of the ores of iron, copper, lead, zinc, silver, gold, and the lesser metals, with especial reference to North America; second half-year, a description of the distribution and occurrence of coal, petroleum, natural gas, asphalt, building-stone, water supply, salines, and minor minerals. Text-book: Kemp's *Ore Deposits of the United States*, and lecture notes privately printed. 3 hours lectures and conferences. Professor KEMP

Required of all fourth-year students in the School of Mines. Elective for seniors in the College who have had Course 1 or 2 or an equivalent. Open, with two additional hours weekly of collateral reading, to candidates for the degrees of A.M. and Ph.D. whose minor subject is Geology.

4—Petrography—A short course in the microscopic study of rocks. Follows Mineralogy 6. 2 lectures and one afternoon, two months of the second half-year. Professor KEMP

Required of second-year students in the School of Mines.

6—Petrology—A discussion of the origin, microscopic structure, and mineralogical composition of the crystalline rocks, and of metamorphism. Pre-requisite: Optical Mineralogy. 2 hours lectures, 4 hours or more laboratory. Professor KEMP

Open to candidates for the degrees of A.M. and Ph.D. whose major or minor subject is Geology.

7—Invertebrate palæontology—A general description of invertebrate fossils, following the biological sequence. Pre-requisite: Biology 1. Text-books: Zittel's *Handbuch der Palæontologie*, vol. i, and Nicholson's *Manual of Palæontology*. 2 hours lectures, 4 hours or more laboratory. Mr. VAN INGEN

Open to candidates for the degrees of A.M. and Ph.D. whose major or minor subject is Geology.

8—Comparative geology—A comparative description and study of the geological formations of the globe, in their areal distributions and taxonomy. Text-books: *Correlation Bulletins of the U. S. Geological Survey*, Kayser's *Text-Book of Comparative Geology*, and the manuals of Geikie, Dana, and De Lapparant. 2 hours lectures and at least 4 hours reading and laboratory. Professor KEMP for the crystalline and pre-Cambrian rocks. Mr. VAN INGEN for the fossiliferous.

Open to candidates for the degrees of A.M. and Ph.D. whose major or minor subject is Geology. Not offered in 1897–98.

9—Palæobotany—Study of fossil plants, following the biological sequence. Pre-requisite: Botany 1. Text-books: Zittel's *Handbuch der Palæontologie*, vol. ii, and Solms-Laubach's *Palæophytology*. 1 hour lecture or conference, 4 hours laboratory or reading for two years. Mr. HOLLICK

Open to candidates for the degrees of A.M. and Ph.D. whose major or minor subject is Geology.

10—Geological examinations and surveys—A discussion of the methods of systematically recording and interpreting geological phenomena; and of the organization and scope of geological surveys on a larger scale. This will be followed by a sketch of the history and results of state and national geological surveys in this and other countries; and of other sources of detailed information regarding local geology. 1 hour. Professor KEMP

11—As a thesis subject which will furnish a major course for the concluding year of study for the degree of doctor of philosophy some such subject as the following will be assigned:

(a) Petrography of the Serpentines in the Vicinity of New York; (b) Geology of Some Restricted Area in Eastern North America; (c) Investigation of Some Series of Ore Deposits; (d) Study of the Flora or Fauna of Certain Geological Horizons, with Field Work. The work will be done under the direction of that officer of the department who has given the subject special attention.

Summer School

12—The Trustees of the University have made an appropriation for a summer school in geology, which defrays the expenses of a small squad of advanced students for about one month each summer, with the professor of geology. During the college year, excursions are offered to points of geological interest near New York, on all Saturdays and holidays of the fall and spring. Few other localities afford so extensive and so accessible exposures as the vicinity of New York.

13—Field geology between the third and fourth years—(*optional between the second and third years*)—The summer school in geology is held in connection with the summer school in practical mining, and at least one week is devoted to field work. Professor KEMP, Mr. HOLLICK, and Mr. VAN INGEN.

During the college year excursions are offered to points of geological interest near New York, on all Saturdays and holidays of the fall and spring. Few other localities afford so extensive and so accessible exposures as the vicinity of New York. The officers of the department.

Equipment

The department of Geology is located in the west wing of Schermerhorn Hall, and occupies three floors. The museums and laboratories in palæontology are in the basement ; the museum of economic geology is on the second floor, and the lecture room, library, and main laboratory are on the third floor. The museums afford very complete series of illustrative material in the branches covered. The laboratory is also fully equipped with the collections and apparatus necessary to the pursuit of microscopic petrography. The library of the late Professor Newberry forms the principal part of the departmental library, and contains many rare books and pamphlets.

The University has an arrangement with the American Museum of Natural History which secures for advanced students especial privileges in its collections. As these contain among others the valuable and unique collection of Palæozoic fossils made by James Hall, the privilege is of especial consequence to students of palæontology.

Germanic Languages and Literatures

WILLIAM HENRY CARPENTER, Ph.D. ..... *Professor of Germanic Philology*
CALVIN THOMAS, A.M. .... *Professor of Germanic Languages and Literatures*
EUGENE HOWARD BABBITT, A.B. ..... *Instructor*
WILLIAM ADDISON HERVEY, A.M. ..... *Tutor*

The department, as its name implies, offers instruction, not only in German, but in the kindred languages and literatures of the other members of the Germanic group. In German the aim of the instruction is primarily to enable students to use the modern language with facility in reading, writing, and, as far as possible, in speaking, and to acquaint them with the masterpieces of German literature. Opportunity is also given to acquire a reading knowledge of the languages of the other Germanic nations, and to study their literatures. Parallel courses are arranged in such a way that while both language and literature are combined in the earlier courses, either side may be subsequently emphasized at will. Courses are also given in the philology of the whole Germanic group. Work supplementary to the lectures is given in the seminar.

The courses offered by the department are grouped under the following heads : German, Gothic, Scandinavian, and Germanic Philology.

Course A is required of freshmen in the College who did not present German at entrance ; Course 1 is open to students who have presented elementary German at entrance ; Courses 2, 3, and 4 are equivalent courses, open to students who have taken Course 1, or the advanced entrance examination in German ; Courses 5, 7, and 8 are open to students who have taken Course 2, 3, or an equivalent ; Course 6 is open to students who have taken Course 5, or an equivalent ; Courses 10 and 11 are open, with the permission of the instructor, to seniors and to specially qualified juniors ; Courses 9, 12, and 13 are open, with the permission of the instructor, to seniors ; Courses A, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13 are open to all university students. The seminar is open to advanced students only.

Courses 5, 6, 7, 8, 9, 10, 11, 12, and 13 are open to auditors.

Courses in German

A—Elementary course. Thomas, *Practical German Grammar;* Harris, *German Reader;* easy stories and plays; in second half-year more difficult prose, by such authors as Heine, Riehl, and Freytag. 5 hours, counting as a 3-hour course. Mr. BABBITT and Mr. HERVEY

Prescribed for freshmen who did not present German at entrance.

1—Grammar, reading, and composition. 3 hours. Mr. BABBITT

The text-books and plan of work are in general the same as those of the second half-year of the elementary course.

Open to students who have presented elementary German at entrance.

Students who have taken the elementary course or Course 1 will be prepared to join Course **2**, **3**, or **4** at the beginning of the second year, either of which will be accepted as an equivalent of the reading knowledge of German required of candidates for the degree of doctor of philosophy in the School of Philosophy.

2—Selected works of Goethe, Schiller, and Lessing. 3 hours. Mr. HERVEY

The following works were read in 1896–97, entire unless otherwise stated: Lessing, *Minna von Barnhelm*, *Laokoon* (in part), *Nathan der Weise* (in part); Schiller, *Die Piccolomini* and *Wallensteins Tod;* Goethe, *Götz von Berlichingen*, *Iphigenie auf Tauris*, *Hermann und Dorothea.*

The works to be read in 1897–98 will be chosen from those read in 1896–97, and the following: Lessing, *Emilia Galotti*, selected prose; Schiller, *Wilhelm Tell*, *Die Jungfrau von Orleans*, *Maria Stuart;* Goethe, *Egmont*, *Dichtung und Wahrheit*, *Italienische Reise.*

3—Historical prose. One volume of Freytag's *Bilder aus der deutschen Vergangenheit*, and other works of a historical or biographical character. 3 hours. Mr. BABBITT

4—Scientific German. Gore, *German Science Reader*, and various scientific monographs. 3 hours. Mr. HERVEY

2, 3, and 4 are equivalent courses, open to students who have taken Course 1 or its equivalent.

5—History of German literature from the earliest times to the 19th century. Lectures, themes, and readings from Müller's *German Classics.* 2 hours. Professor THOMAS

Open to students who have taken Course 2, 3, or its equivalent.

6—Goethe's Faust: first and second parts. Lectures and recitations. 2 hours. Professor THOMAS

Open to students who have taken Course 5, or its equivalent.

7—Practice in speaking and writing German. Talks, conferences, and themes, all in German, upon linguistic and literary topics. 2 hours. Professor THOMAS

Open to students who have taken Course 2 or 3, or its equivalent.

8—History of the German language. Lectures and texts. 2 hours. Professor W. H. CARPENTER.

Open to students who have taken Course 2 or 3, or its equivalent.

9—Great German writers. Lessing (first half-year) and Goethe (second half-year). 2 hours. Professor THOMAS

Open, with the permission of the instructor, to seniors, and to all university students.

Courses in Scandinavian

10—Swedish. Elementary course in the language with miscellaneous reading, and a general survey in lectures of the history of Swedish literature. 2 hours. Professor THOMAS

Open, with the permission of the instructor, to seniors and to specially qualified juniors, and to all university students.

11—Icelandic, elementary course. Sweet, *Icelandic Primer;* Kahle, *Altisländisches Elementarbuch.* 2 hours. Professor W. H. CARPENTER

Open, with the permission of the instructor, to seniors, and to specially qualified juniors, and to all university students.

Course in Gothic

12—Gothic. Wright, *Primer of the Gothic Language;* Streitberg, *Gotisches Elementarbuch;* Bernhardt, *Die gotische Bibel.* 2 hours. Professor W. H. CARPENTER

Open, with the permission of the instructor, to seniors, and to all university students.

Course in Germanic Philology

13—General introduction to Germanic philology. Lectures and exercises. 2 hours. Professor W. H. CARPENTER

Open, with the permission of the instructor, to seniors, and to all university students.

Seminar

Germanic Seminar—Old High German (first half-year). Critical study of O. H. G. poetry, exclusive of Otfrid. Middle High German (second half-year). Critical study of selected poems of Walther von der Vogelweide. 2 hours. Professors W. H. CARPENTER and THOMAS

The seminar is open to advanced students only. Attendance at the meetings will be obligatory upon candidates for the degree of doctor of philosophy whose major subject lies in this department.

Equipment

The University library offers excellent facilities for the study of German, both on the literary and the linguistic side. In German literature all periods are very fully represented, and none of the minor authors are omitted. The Goethe collection, which consists of more than 1000 titles, affords to the student of Germany's greatest author unrivalled opportunities for the prosecution of his researches. The Scandinavian collection contains a fair representation of the ancient saga and poetical literature, and all the eminent writers of modern Norway, Denmark, and Sweden.

The library has sets and the current numbers of the important periodicals which deal with Germanic literature and Germanic and general philology.

It has also sets of periodicals no longer published, and a large collection of the transactions and publications of the learned societies of America and Europe.

Greek

* HENRY DRISLER, LL.D. ..... *Jay Professor Emeritus*
EDWARD DELAVAN PERRY, Ph.D. ..... *Jay Professor*
JAMES RIGNALL WHEELER, Ph.D. ..... *Professor*
CLARENCE HOFFMAN YOUNG, Ph.D. ..... *Instructor*
JAMES DENNISON ROGERS, Ph.D. ..... *Assistant*

Courses 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 14 are open to seniors in Columbia College and to university students; Course 15 and the seminar are open to advanced students only.

Courses A, B, 1, 2, 3, and 4 may not be counted toward the degree of masters of arts or doctor of philosophy; Courses 5, 6, 10, and 11 may not be so counted except as the basis of special work done in connection therewith.

All the courses in this department, except A, B, 1, 2, 3, and 4, are open to women on the same terms as to men. Women wishing to enter any of the courses as special students or as candidates for a degree must register through Barnard College.

All the courses, except A, B, 1, 2, 3, 4, 15, and the seminar, are open to auditors.

Courses

A—Elementary course. 5 hours, counting as a 3-hour course. Dr ROGERS

Open to students who did not present Greek at entrance.

B—First half-year: Selected orations of Lysias. Second half-year: Homer's *Odyssey*, five books. Greek prose composition fortnightly throughout the year. 3 hours. Professor PERRY, Dr. YOUNG, and Dr. ROGERS

Open to freshmen who presented Greek at entrance, and to sophomores who have taken Greek A.

Opportunity for additional reading, as well as for additional practice in Greek composition, at the option of the student, will be offered.

1—First half-year: Euripides' *Hecuba* and Sophocles' *Ajax*, with Euripides' *Medea* for private reading; occasional lectures on the Greek drama. Second half-year: Plato's *Protagoras* and Aristophanes' *Clouds*, with Plato's *Apology* and *Crito* for private reading. 3 hours. Dr. YOUNG (first half-year) and Professor PERRY (second half-year).

Open to students who have taken Course B.

An additional hour weekly in advanced Greek composition will be offered by Dr. ROGERS, and students who take this may count Course 1 as a four-hour course. Candidates for honors in classics are strongly urged to avail themselves of this opportunity.

3—First half year: Æschylus' *Agamemnon* and Sophocles' *Electra*, with Æschylus' *Choephoræ* for private reading. Second half-year: Selections from Thucydides, and Plutarch's *Life of Nicias;* optional exercises in Greek composition. 3 hours. Professor PERRY (first half-year) and Dr. YOUNG (second half-year).

Open to students who have taken Course 1 or Course 2.

* Deceased.

4—First half-year: Sophocles' *Œdipus Tyrannus* and *Œdipus Coloneus*. Second half-year: Demosthenes' *Olynthiac and Philippic Orations*, and Plutarch's *Life of Demosthenes;* optional exercises in Greek composition. 2 hours. Professor WHEELER

Open to students who have taken Course 1 or Course 2.

5—Lectures on Greek literature, with readings. Part I, Poetry. Professor WHEELER

Open only to students who have taken Greek (other than Course A) for at least two years in college.

7—The *Republic* and *Phædrus* of Plato, with selections from other dialogues, and lectures. 3 hours. Professor PERRY

Open to students who have taken Greek (other than Course A) for three years in college.

9—Aristotle's *Poetics;* four plays. 2 hours. Professor WHEELER

Open only to students who have taken Greek (other than Course A) for at least three years in college.

10—New Testament Greek. Gospel of St. Matthew and Acts of the Apostles. 2 hours, first half-year. Dr. YOUNG

Open to students who have taken Greek (other than Course A) for two years in college.

11—New Testament Greek. Epistles. 2 hours, second half-year. Dr. YOUNG

Open to students who have taken Greek (other than Course A) for two years in college.

12—Introduction to the Study of Greek Archæology. 2 hours. Professor WHEELER (first half-year) and Dr. YOUNG (second half-year).

Open to juniors and seniors.

15—Greek epigraphy. Lectures and practice in the reading of inscriptions. 1½ hours. Professor WHEELER

Classical Seminar—Greek Section

Exercises in the interpretation of dialectic inscriptions, chiefly Doric. Reading and discussion of original papers. 2 hours second, half-year. Professor PERRY

Equipment

The library is unusually rich in early and rare editions of the classics; there is also an excellent selection of recent works on the Latin and Greek languages and literatures and on classical philology in general. Especially well represented are the departments of archæology, epigraphy, palæography, Roman history, and Roman law. The library contains all the important serial publications, issued abroad and at home, in the field of philology and archæology. In Greek epigraphy its collection is almost complete. This is supplemented in the department of Greek by an extensive system of "squeezes" from the marbles in many parts of Greece and the British Museum. A collection of casts, photograghs, and maps illustrative of the art, architecture, and topography of Rome, and a numismatical collection, are now in course of formation.

The department of Greek is well equipped with maps, plans, and models. It possesses a large collection (to which important additions have recently been made) of photographs and photographic reproductions of Greek monuments, localities, and sculpture, books of illustrations, lantern-slides, a few casts, and electrotypes, for the illustration of ancient monuments, art, and daily life; and these are continually drawn upon whenever opportunity offers in reading or

lectures, that the literature and the art may each complement the other. The Avery collection of the library, with its richly illustrated works on art and archæology, as well as architecture, offers an unusual opportunity for further study of these subjects, and forms an invaluable subsidiary to the department. This is again reinforced by the facilities offered through the arrangement between the University and the Metropolitan Museum of Art, by which students of this University may have free access to all the museum collections for study and comparison. The departments of Latin and Greek also possess in the "Classical Study" a special library of selected books, which are placed at the disposal of university students.

Courses in New Testament Greek at the Union Theological Seminary

These courses may count as *part* of the work required for the degrees of master of arts and doctor of philosophy at Columbia University; but students who intend to avail themselves of this privilege must come to an understanding with the dean of the faculty of Philosophy of Columbia University with regard to equivalence of courses and additional work required, at the time of registering themselves, or of renewing their registration, as candidates for a degree.

First half-year:

New Testament grammar: the Synoptic Gospels. 4 hours. Mr. FRAME
Catholic or minor Pauline Epistles. 2 hours. Dr. VINCENT
Galatians or equivalent. 2 hours. Mr. FRAME
Romans. 2 hours. Dr. VINCENT
Ephesians. 1 hour. Dr. VINCENT

Second half-year:

The Synoptic Gospels; grammatical and exegetical drill. 3 hours. Mr. FRAME.
The Johannine writings. 2 hours. Dr. VINCENT
Acts of the Apostles. 2 hours. Mr. FRAME
Hebrews. 2 hours. Dr. VINCENT
Philippians or equivalent. 1 hour. Dr. VINCENT
James, or Pastoral Epistles. 1 hour. Mr. FRAME

Gynecology

GEORGE MONTGOMERY TUTTLE, M.D. ..... *Professor*
GEORGE W. JARMAN, M.D. ..... *Chief of Clinic and Instructor*
W. S. STONE, M.D. ..... *Instructor*
E. H. L. MCGINNIS, M.D. ..... *Electro-Therapeutist*
B. W. STIEFEL, M.D. ..... *Clinical Assistant*
CHARLES I. PROBEN, M.D. ..... *Clinical Assistant*
JOHN M. KENNEDY, M.D. ..... *Clinical Assistant*
E. P. MALLETT, M.D. ..... *Clinical Assistant*
J. V. D. YOUNG, M.D. ..... *Clinical Assistant*
G. H. MALLETT, M.D. ..... *Clinical Assistant*
W. G. LYLE, M.D. ..... *Clinical Assistant*
J. J. HIGGINS, M.D. ..... *Clinical Assistant*
B. T. TILTON, M.D. ..... *Clinical Assistant*
A. S. VOSBURGH, M.D. ..... *Clinical Assistant*

Courses

1—The principles and practice of gynecology—Didactic lectures. 3 hours from March 15th to the end of the academic year. Professor TUTTLE

Required, in the second and third years, of candidates for the degree of M.D.

2—Clinical instruction at the Vanderbilt Clinic. 1 hour. F. at 3 P.M. Professor TUTTLE

Required, in the third year, of candidates for the degree of M.D.

3—Practical instruction in diagnosis, treatment, and the use of instruments. 6 lessons for each student, at the Vanderbilt Clinic. Dr. JARMAN and Dr. STONE

Required, in the third year, of candidates for the degree of M.D.

4—Hospital clinics in operative gynecology—Roosevelt Hospital, McLane Operating Theatre. 6 exercises for each student, Tu., Th., and Sat., at 2.30 P. M.

Required, in the third year, of candidates for the degree of M.D.

The McLane Operating Theatre of the Roosevelt Hospital

This is upon the hospital grounds, immediately opposite the College of Physicians and Surgeons, and is one of the most thoroughly equipped buildings in this country for instruction in the surgery of gynecology.

The cases upon which operations are demonstrated are taken from the gynecological wards of the Roosevelt Hospital, which are under the exclusive direction of the professor of Gynecology, and the cases in which are all available for the instruction given by him.

History and Political Philosophy

WILLIAM MILLIGAN SLOANE, Ph.D., L.H.D.....*Professor*
HERBERT LEVI OSGOOD, Ph.D.....*Professor*
WILLIAM ARCHIBALD DUNNING, Ph.D.....*Professor*
JAMES HARVEY ROBINSON, Ph.D.....*Professor*
HARRY ALONZO CUSHING, Ph.D.....*Tutor*
GEORGE LOUIS BEER, A.M.....*Lecturer*
WILLIAM ROBERT SHEPHERD, Ph.D.....*Prize Lecturer*

The two groups of courses in this department, history and political philosophy, are intended partly for undergraduates and partly for those seeking the higher degrees. Course A is required of sophomores in the College. Courses 1, 2, 3, 4, and 5 are elective for undergraduates to the end of the junior year. For university students who desire a general view of history, either as an element in liberal culture or as preliminary to special work in law or political science, the courses particularly recommended are 7, 8, 15, 23, and 40. These courses are open to seniors in the College and to other candidates for the degree of A.B. Courses 11, 12, 13, 24, 29, and 42 are open only to advanced stu-

dents who are qualified to do special detailed work in the respective subjects. Attention is particularly called to the following courses, which, while given in other departments, deal with subjects which constitute an integral part of the domain of history: history of European law; general history of diplomacy; history of American diplomacy; and the historical courses in the department of Economics and Social Science.

Courses in History

A—American history during the colonial and revolutionary periods. 3 hours. Dr. CUSHING

1—Ancient history. 3 hours. Dr. SHEPHERD

2—Mediæval history. 3 hours. Dr. SHEPHERD

3—English history to 1832. 3 hours. Dr. CUSHING

4—American history from the close of the Revolution to the Mexican War. 3 hours. Professor DUNNING

5—Modern history of Continental Europe. 3 hours. Professor DUNNING and Dr. CUSHING

7—Transition epochs of American history. 2 hours. Professor SLOANE

8—Introduction to modern European history: Renaissance and Reformation. 2 hours. Professor ROBINSON

9—Political history of Europe from the peace of Augsburg to the peace of Westphalia (1555–1648)—Lectures and outside reading. 2 hours, first half-year. Professor ROBINSON

Given in 1898–99 and alternate years thereafter.

10—The period of Louis XIV and the antecedents of the French Revolution—Lectures and required reading of De Tocqueville's *Ancien Régime* and Sorel's *Europe et la Révolution*, vol. i. 2 hours, second half-year. Professor ROBINSON

Given in 1898–99 and alternate years thereafter.

11—Mediæval institutions and culture. 2 hours. Professor ROBINSON

12—The French Revolution and the Napoleonic period. 2 hours. Professor SLOANE

13—Sources of later mediæval and modern Continental history. Methods of historical study. 2 hours, second half-year. Professor ROBINSON

Given 1898–99.

14—Seminar in later mediæval and modern European history. 1 hour. Professor ROBINSON

15—Political and constitutional history of England. Lectures and private reading. 2 hours. Professor OSGOOD

16—The mediæval European city. 2 hours, second half-year. Mr. BEER

19—Early church history, A.D. 100–311. 2 hours. Given at the Union Theological Seminary.

20—Mediæval church history, from the time of Constantine to the Reformation. 2 hours. Given at the Union Theological Seminary.

21—Modern church history; the Reformation and Counter-reformation. 2 hours. Given at the Union Theological Seminary.

23—Political and constitutional history of the United States—Lectures and private reading. 2 hours. Professor BURGESS

24—Political history of the colonies and of the American Revolution—Investigation course. 2 hours. Professor OSGOOD

25—The United States during the civil war and reconstruction—Lectures and private reading. 2 hours, second half-year. Professor DUNNING

27—American church history. 2 hours. Given at the Union Theological Seminary.

28—Seminar in early American history. 1 hour. Professor OSGOOD

29—The war of 1812, with reference to European conditions. 2 hours. Professor SLOANE

Courses in Political Philosophy

40—General history of political theories—Lectures with references to Janet, *Histoire de la Science Politique;* Bluntschli, *Geschichte der neueren Staatswissenschaften;* and Pollock, *History of the Science of Politics*. 2 hours. Professor DUNNING

41—American political philosophy—Assigned reading, essays, and discussions. 1 hour (or 2 hours each alternate week). Professor DUNNING

42—Seminar in political philosophy. 1 hour. Professor DUNNING

Equipment

The department employs in its work the best German historical maps, and one of the four largest relief globes ever made. In the special library of history and political science, numbering 100,000 volumes, are to be found all the most valuable works for either general reading or special research; and this is supplemented by the rich collections of the Astor and Lenox Libraries as well as those of the Bar Association and the New York and Long Island Historical Societies, all of which are readily accessible to students of the department. Under the auspices of the Academy of Political Science, to which advanced students are eligible as members, opportunities are given for the discussion of questions of interest as presented in papers by specialists.

Indo-Iranian Languages

(See page 113)

Italian

(See page 137)

Laryngology

(*Including Diseases of the Larynx, Pharynx, and Nasal Passages.*)

GEORGE MOREWOOD LEFFERTS, M.D. ..... *Clinical Professor*
D. BRYSON DELEVAN, M.D. .... *Chief of Clinic and Instructor in Laryngology*
WILLIAM K. SIMPSON, M.D. ..... *Clinical Assistant*
GEORGE A. RICHARDS, M.D. ..... *Clinical Assistant*
CHRISTOPHER J. COLLES, M.D. ..... *Clinical Assistant*
JAMES P. MCEVOY, M.D. ..... *Clinical Assistant*
RICHARD FROTHINGHAM, M.D. ..... *Clinical Assistant*
EDMUND W. BILL, M.D. ..... *Clinical Assistant*
JONATHAN DWIGHT, Jr., M.D. ..... *Clinical Assistant*
JOSEPH E. FULD, M.D. ..... *Clinical Assistant*
LEONARD W. ELY, M.D. ..... *Clinical Assistant*

Courses

Instruction in the department of Laryngology (including diseases of the larynx, pharynx, and nasal passages) is both didactic and clinical. It comprises:

1—A systematic course of didactic lectures, which for convenience in teaching and economy of time, is given to the fourth-year students collectively in the amphitheatre of the Vanderbilt Clinic.

These lectures treat of such general principles of pathology, diagnosis, and therapeutics as concern diseases of the throat and nasal passages; each lecture being illustrated by wall plates in color, models, pathological specimens, apparatus, and instruments, and as the subject may also demand, either the presentation of selected cases with a colored-chalk blackboard sketch of their pathological and diagnostic appearances, or by the personal demonstration of the patient with the aid of the laryngoscopic or rhinoscopic mirror.

During the course, practical illustrations of all the methods of local treatment are given and all minor surgical operations upon the throat and nasal passages performed in the presence of the class.

Both the subjects and the dates of these lectures, each of which is, as far as possible, complete in itself, are announced in printed form at the beginning of the session, and a copy furnished each student in attendance. 1 hour a week for twenty-eight weeks. M. at 2 P.M. Professor LEFFERTS

Required in the fourth year of candidates for the degree of M.D.

2—Practical clinical instruction at the Vanderbilt Clinic, to sections of the class, in the use of the laryngoscope and rhinoscope. The work of each course of twelve lessons is based upon the principle of short, preliminary explanations, followed by practical work by the student. (1) Upon the "laryngoscopic phantom," until he has acquired the use of reflected light with the aid of the concave head-mirror, and then (2) the examination of adult patients under the direct and personal supervision of the instructors. The necessary instruments and apparatus are furnished by the department. Dr. DELEVAN

Required in the fourth year of candidates for the degree of M.D.

3—Individual clinical demonstrations, at which, during his course of "section" teaching, each student has demonstrated to him, by the instructor, a certain number of pathological cases. Dr. SIMPSON

Equipment

The department of Laryngology occupies the west end of the second floor of the Vanderbilt Clinic. It possesses:

1—Two large clinic rooms for the separate registration, examination, and treatment of male and female patients. Each of these rooms contains two compartments or alcoves, fitted with Mackenzie light condensers, medicine and instrument cabinets, cuspidors with running water, a compressed-air apparatus for medicated sprays (the steam air-pump and large storage reservoir for compressed air being located in the cellar of the clinic building), electromotor and galvano-cautery, rheostat and instruments supplied by a special dynamo. One of these rooms (No. 7) is fitted in part with glass cases and cabinets of drawers, to accommodate the "museum of teaching apparatus," charts, models, pathological specimens, and a collection of operative instruments.

2—An operating room for cases requiring anæsthesia, which also serves as a private examination cabinet for patients, and as an office and demonstration room for the professor.

3—A large hall, fitted with nineteen separate stalls, each with lamp, "laryngoscopic phantom," mirrors, and other instruments and conveniences for the instruction of classes of students in the practical use of the laryngoscope and rhinoscope.

4—A "demonstration room" for pathological cases to limited numbers of students.

5—A large, light hallway, with ample and convenient seating capacity; in communication with all of the above rooms; used as the reception and waiting room for patients.

6—Access to the amphitheatre of the clinic; fitted with electric light for examinative purposes. Rheostats for small incandescent lamps and the galvano-cautery and electromotor. A dark cabinet for laryngoscopic and rhinoscopic demonstrations, and ample hanging facilities for a large collection of colored wall charts of pathology, and the like. The clinical lectures are given in this amphitheatre.

The department is further equipped with a complete collection of the most approved modern instruments and appliances, by the best makers, for the diagnosis and treatment of the diseases of the throat and nose, and for the giving of instruction therein.

Among other things may be mentioned: a complete collection of the modern electric illuminating apparatus for the examination of patients; the electric laryngoscope; apparatus for the trans-illumination of the accessory cavities of the face; dilators, candulæ, and other instruments used in the treatment of laryngeal stenosis; operative instruments by Pfau of Berlin, arranged in cases and catalogued; laryngoscopic "phantoms," by Bock of Leipsic, for exercising the students in the use of the various instruments preliminary to the examina-

tion of the living subject; one hundred anatomical models of the healthy and diseased larynx by Stieger of Leipsic and Tobold of Berlin; models of the normal larynx by Bock of Leipsic, and by Auzoux of Paris; physiological models to illustrate the normal movements and the various paralyses of the vocal cords; a diagrammatic model, to illustrate the mechanical interference of laryngeal neoplasms with the act of phonation; photographs of the living larynx, in health and disease; four hundred wall plates in color by Wright of New York, of the pathological conditions of larynx, pharynx, naso-pharynx, and nasal passages. These are of large size (42 x 36) to illustrate the clinical lectures. A collection of large drawings, illustrating the anatomy of the accessory sinuses of the nose. Also illustrated by a series of sections of the skull, made by Ward of Rochester, and by a series of models of frozen sections of the human head, prepared by Odo Betz and by Elkins. Fränkel's photogravures of the same subjects. Drawings and instruments to illustrate the operation of intubation. Reproductions of all the earlier tubes for laryngeal catheterization and intubation. This latter collection is historically interesting as illustrating the evolution of the intubation tube. A special manikin, upon which the process of intubation may be practically demonstrated to a large number of students at one time. Wet preparations of the larynges of children, demonstrating *in situ* the proper-sized intubation tube, and its exact position in the larynx at different ages (1–15 years); and a series of models by Elkins, of laryngeal diphtheria; a collection of skulls, demonstrating the various lesions of the nasal septum, and abnormalities of the nasal chambers.

The pathological and anatomical museum of the department contains at present one hundred and fifty carefully prepared and mounted wet preparations of the larynx and its diseases. This collection is specially rich in the rare specimens, such as benign neoplasms of the larynx, intrinsic and extrinsic, laryngeal cancer, and others.

Latin

HARRY THURSTON PECK, Ph.D., L.H.D. ..... *Professor*
JAMES C. EGBERT, JR., Ph.D. ..... *Adjunct Professor*
NELSON G. MCCREA, Ph.D. ..... *Instructor*
HENRY J. BURCHELL, JR., A.M. ..... *Assistant*
CHARLES KNAPP, PH.D. ..... *Assistant*

Courses A and B are open to freshmen in the College: 1 and 2, to sophomores, unless they elect Chemistry as a substitute; 3 and 4 are open to juniors, 3–6, 8, and 11, to seniors and university students; 7, 9, 10, 12, to university students; 7 to seniors, by special permission; and 5 to specially qualified juniors.

Courses

A—Pliny's letters—Horace, odes and epodes. Latin prose composition. Reading at sight. 3 hours. Mr. BURCHELL

B—Selected readings in prose and verse. 3 hours. Dr. MCCREA

1—Livy, Bk. XXI—Prose composition—Horace, satires. 3 hours. Professor EGBERT

2—Epistles of Horace—Roman literature. 3 hours. Dr. McCrea

3—Cicero's Tusculans and De Finibus—Lucretius—Lectures on Roman philosophy. 3 hours. Professor Egbert and Dr. McCrea

4—Plautus and Terence—Lectures on Roman comedy. 2 hours. Professor Peck

5—Introduction to Latin inscriptions. 2 hours. Professor Egbert

6—Rapid reading (Horace, Virgil, Ovid). 2 hours. Professor Peck

7—Petronius. 2 hours. Professor Peck

8—The history of the Latin language. 2 hours. Professor Peck

9—Latin inscriptions. 2 hours. Professor Egbert

10—Latin palæography and diplomatics. 1 hour. Professor Egbert

11—Advanced Latin prose composition. 2 hours. Dr. McCrea

12—Classical seminar (Latin section). 2 hours, first half-year. Professors Peck and Egbert

LAW

The courses offered in Law are here indicated. For full information as to the course leading to the degree of bachelor of laws consult the statement concerning the School of Law.

Municipal or Private Law

William A. Keener, LL.D. ..... *Professor*
Francis M. Burdick, LL.D. ..... *Professor*
George W. Kirchwey, A.B. ..... *Professor*
George F. Canfield, A.M., LL.B. ..... *Professor*
Henry W. Hardon, A.M., LL.B. ..... *Professor*
Herbert Noble, A.M., LL.B ..... *Lecturer*
Charles T. Terry, A.B., LL.B. ..... *Lecturer*

Courses 1 to 6, inclusive, constitute the work of the first year in the Law School and are open to seniors in the College. Courses 7 to 15, inclusive, are open to students who have taken the work of the first year in law. Courses 16 to 25, inclusive, are open to students who have taken the work of the first and second years in law.

Courses

1—Elements of jurisprudence and equity. 2 hours. Professor Keener

2—Contracts. 4 hours. Mr. Terry

3—Real and personal property. 2 hours. Professor Kirchwey

4—Torts. 2 hours. Professor Burdick

5—Common-law pleading and practice. 2 hours, second half-year. Professor Hardon

6—Domestic relations and law of persons, 2 hours, first half-year. Mr. Noble

7—Quasi-contracts. 2 hours. Professor KIRCHWEY

8—Equity. 2 hours. Professor KEENER

9—Real and personal property. 2 hours. Professor KIRCHWEY

10—Agency. 2 hours. Professor CANFIELD

11—Bailments and carriers. 2 hours. Mr. NOBLE

12—Sales of personal property. 2 hours. Professor BURDICK

13—Code practice. 2 hours, second half-year. Professor HARDON

14—Equity pleading and practice. 2 hours, first half-year. Professor HARDON

15—Negotiable paper. 2 hours. Professor BURDICK

16—Code pleading and practice. 2 hours. Professor HARDON

17—Corporations. 2 hours. Professor KEENER

18—Equity. 2 hours. Professor KEENER

19—Evidence. 2 hours. Professor CANFIELD

20—Insurance. 2 hours, second half-year. Mr. NOBLE

21—Partnership. 2 hours. Professor BURDICK

22—Real and personal property. 2 hours. Professor KIRCHWEY

23—Suretyship and mortgage. 2 hours. Professors BURDICK and KIRCHWEY

24—Wills and administration. 2 hours. Professor HARDON

25—Doctrines peculiar to New York law. 1 hour. Professor CANFIELD

Public Law and Jurisprudence

JOHN WILLIAM BURGESS, Ph.D., LL.D. ..... *Professor*
MUNROE SMITH, A.M., J.U.D. ..... *Professor*
FRANK JOHNSON GOODNOW, A.M., LL.D. ..... *Professor*
JOHN BASSETT MOORE, A.B. ..... *Professor*
EDMOND KELLY, A.M ..... *Lecturer*

The courses in this department fall into two divisions: public law and jurisprudence. The purpose of the courses in public law is to give a complete general view of international, constitutional, administrative, and criminal law. They serve primarily to supplement the courses in the department of History and Economics, and to give with them a complete system of political science. In the second place, they supplement the courses offered by the department of Private Law, constituting with these a well-rounded legal curriculum. The courses in international, constitutional, and administrative law are also recommended to journalists, students of philosophy and theology, and in general to all who desire to understand the organization and working of governmental systems. The courses in criminal law and in international private law (conflicts of private law) are more professional in their character, and are chiefly intended for law students.

The courses in Roman law and comparative jurisprudence, while constituting an integral portion of a complete legal education, will be found useful to all those who desire a general comprehension of the principles of private law rather than a professional training in its details. The introductory course upon the Roman law (21) and that upon European legal history (23) are especially recommended to students of history, economics, and philosophy.

Courses in Public Law

A—Constitutional Law

1—Comparative constitutional law of the principal European states and the United States—Lectures, 2 hours. Professor BURGESS

5—Seminar in the constitutional law of the United States—Investigation and discussion, 2 hours. Professor BURGESS

The courses in the constitutional history of Europe, England, and the United States (*cf.* courses in history) are regarded as a necessary introduction to the above courses in constitutional law.

B—International Law

6—History of diplomacy—Lectures, 2 hours, first half-year. Professor MOORE

7—History of American diplomacy—Lectures, 2 hours, second half-year. Professor MOORE

8—International law—Lectures, 2 hours. Professor MOORE

10—Seminar in international law. Professor MOORE

C—Criminal Law

11—Criminal law, including the conflict of penal laws, and extradition—Lectures, 2 hours. Professor MOORE

D—Administrative Law

16—Comparative administrative law—Lectures, 2 hours. Professor GOODNOW

17—Municipal government—Lectures, 2 hours, second half-year. Mr. KELLY

18—Law of taxation—Lectures, 2 hours, second half-year. Professor GOODNOW

20—Seminar in administrative law. Professor GOODNOW

Courses in Roman Law and Comparative Jurisprudence

21—Roman law I—Sohm's *Institutes of Roman Law*, supplemented by lectures. 2 hours, first half-year. Professor MUNROE SMITH

22—Roman Law II—Discussion of selected cases from the *Corpus Juris Civilis* principally in contracts. 2 hours, second half-year. Professor MUNROE SMITH

23—History of European law (early German law; Frankish law; feudalism; the canon law; the reception of Roman law in mediæval Europe; the reaction against Roman law, canon and civil, and the movement towards national codification)—Lectures, 2 hours. Professor MUNROE SMITH

Given in 1897–98 and alternate years thereafter.

24—Comparative jurisprudence—Lectures and discussions, 2 hours. Professor MUNROE SMITH

Given in 1898–99 and alternate years thereafter.

25—International private law (conflicts of private law)—Lectures and discussion of cases, 1 hour. Professor MUNROE SMITH

29, 30—Seminars in legal history and comparative legislation. Professor MUNROE SMITH

Literature

(See page 73.)

Materia Medica and Therapeutics

GEORGE L. PEABODY, M.D. ..... *Professor*

Courses

Instruction in this department is both didactic and clinical.

1—The didactic course embraces general therapeutic considerations ; modes of administering drugs ; the individual drugs used in treating disease, their physiological effects and therapeutic uses, and the toxicological effects of such of them as are poisons ; remedial measures other than the use of drugs, including electricity, dietetics, the use of water (including bathing and the administration of mineral waters) ; physical exercise, and the like.

The department has a full collection of all the drugs lectured upon, as well as of their important preparations. After each lecture every student has an opportunity of examining specimens of all the drugs and preparations that formed the subject of the lecture. 3 hours. Professor PEABODY

Required, in the second and third years, of candidates for the degree of M.D.

2—The clinical instruction in therapeutics is given at the bedside in the wards of the New York and Roosevelt Hospitals.

A large number of patients are presented to the class, and abundant opportunity is afforded of observing the modifications in the natural course of diseases which are produced by therapeutic procedures, including not only the action of drugs, but also the effects of such remedial measures as cold baths, wet packs, electricity, and the like.

Frequent opportunity is also given for the personal examination of patients by members of the class in attendance ; and the entire course of protracted diseases, with their variations in symptoms and physical signs as well as in their treatment, can thus be observed.

Facilities are also extended for witnessing the performance of autopsies in fatal cases as frequently as the hospital regulations permit.

Twice a week for three months at the New York Hospital, once a week for two months at the Roosevelt Hospital. Professor PEABODY

Required, in the third and fourth years, of candidates for the degree of M.D.

Mathematics

J. HOWARD VAN AMRINGE, Ph.D., L.H.D., LL.D. ..... *Professor*
THOMAS SCOTT FISKE, Ph.D. ..... *Professor*
FRANK NELSON COLE, Ph.D. ..... *Professor*
JAMES MACLAY, C.E. ..... *Instructor*
JONATHAN BRACE CHITTENDEN, Ph.D. ..... *Tutor*
CASSIUS JACKSON KEYSER, A.M. ..... *Tutor*
GEORGE BALTHASAR GERMANN, A.B. ..... *Assistant*

Courses

A—Geometry, volumetric and spherical (Davies' *Legendre*, Books 6–9). 3 hours, first half-year.

Algebra from quadratics (Wells' *College Algebra*). 3 hours, second half-year. Mr. MACLAY, Dr. CHITTENDEN, and Mr. KEYSER

Prescribed for freshmen in the College who did not offer advanced mathematics at the entrance examination.

1—Trigonometry, plane, analytical, and spherical, and mensuration (Davies' *Legendre*). 3 hours, first half-year. Professor FISKE

Open to students in the College who have taken Course **A** or who offered advanced mathematics at the entrance examination.

2—Analytical geometry, first part. Straight line, circle, parabola, and transformation of co-ordinates (Wentworth's *Analytical Geometry*). 3 hours, second half-year. Professor FISKE

Open to students who have taken Course **1**.

3—Elementary projective geometry. 3 hours. Mr. MACLAY

Open to students who take, or have taken, Courses **1** and **2**.

4—Analytical geometry, second part. Continuation of Course **2**. 3 hours, first half-year. Professor VAN AMRINGE

Open to students who have taken Courses **1** and **2**.

In 1897–98 Course **4** includes also the first part of analytical geometry, and continues throughout the year.

5—Theory of equations. First eleven chapters of Burnside and Panton's *Theory of Equations*. 3 hours, second half-year. Professor VAN AMRINGE

Open to students who have taken Course **4**.

Not given in 1897–98.

6—Calculus. Osborne's *Differential and Integral Calculus*. 3 hours. Professor VAN AMRINGE

Open to students who take, or have taken, Course **4**.

7—Advanced analytical geometry. C. Smith's *Solid Geometry* and Scott's *Introduction to Modern Methods in Analytical Geometry*. 3 hours. Mr. KEYSER

Open to students who have taken Courses **4** and **5**, and who take, or have taken, Course **6**.

8—Advanced calculus. Based on Williamson's *Differential and Integral Calculus*. 3 hours, first half-year. Professor FISKE

Open to seniors who have taken Course **6**.

9—Differential equations. Based on Woolsey-Johnson's *Treatise on Differential Equations*. 3 hours, second half-year. Professor FISKE

Open to seniors who have taken Course **8**.

10—Trigonometry (as in Course **1**) and algebra (Wells' *College Algebra*) from series. 4 hours, first half-year. Mr. MACLAY, Dr. CHITTENDEN, and Mr. KEYSER

11—Analytical geometry (Wentworth's) through the hyperbola. 4 hours, second half-year. Mr. MACLAY, Dr. CHITTENDEN, and Mr. KEYSER

Courses **10** and **11** are required of all first-year students in the School of Mines, School of Chemistry, and School of Engineering.

12—Analytical geometry (Wentworth's) from the loci of the second order, and differential and integral calculus (Osborne's). 4 hours. Professor VAN AMRINGE

Required of second-year students in the School of Mines and School of Engineering.

14—Theory of equations and introduction to modern algebra. 3 hours. Professor COLE

For A.M. and Ph.D. Minor for A.M.

15—Theory of invariants. 3 hours, first half-year. Dr. CHITTENDEN

For A.M. and Ph.D. Half-minor for A.M.

16—Higher plane curves. 3 hours, second half-year. Dr. CHITTENDEN

For A.M. and Ph.D. Half-minor for A.M.

17—Analytical theory of curves of double curvature and curved surfaces. 3 hours. Mr. MACLAY

For A.M. and Ph.D. Minor for A.M.

18—Theory of substitutions. 3 hours. Professor COLE

For A.M. and Ph.D.

19—General theory of functions and elliptic functions. 3 hours. Professor FISKE

For A.M. and Ph.D.

21—Groups of linear transformations, and the theory of the equation of the fifth degree. 3 hours. Professor COLE

Not given in 1897–98.

22—Theory of functions (second course). 3 hours. Professor FISKE

Not given in 1897–98.

Equipment

In the equipment of the department of Mathematics is a large number of models, charts, and instruments. An elaborate set of models illustrates the metric system of weights and measures. A set of about fifty models of elementary solid and spherical geometry is intended to exemplify the demonstrations contained in Davies' *Legendre*. These are made of cherry wood with markings in inlaid ebony, and are of unusually large size. There are several similar models representing the different plane sections of the cone. A series of wooden models, constructed by Schroeder of Darmstadt, also illustrates elementary solid geometry, and contains, in addition, examples of all the different forms of the surfaces of the second order. There is a series of models of descriptive geometry, also constructed by Schroeder. The horizontal and vertical projections are traced upon boards solidly joined together at right angles and of convenient size to allow in general the representation of three different models, or of three different views of the same model. The form and construction suggest a division of these models into two classes : (1) the representation in metal of lines and surfaces, adjusted upon axes, the projections of several of their positions being given ; (2) the representation of solid bodies in hard wood, including the exhibition of their plane sections in various directions and the intersections of different surfaces and solids.

A collection of models, which was presented to the department by President Low, having been purchased by him from the German University Exhibit at the

Chicago Exposition in 1893, illustrates analysis situs, theory of functions of a complex variable, surfaces of higher order, their singularities and curvature, and line-geometry.

A series of charts illustrates the theory of plane algebraic curves, especially those of the fourth order, the resolution of higher plane singularities into equivalent elementary singularities, the expression of functions by means of infinite series and infinite products, and conformal representation by means of algebraic and elliptic functions.

Among the instruments of the department are an Amsler's planimeter, many instruments for executing geometrical constructions upon the blackboard and paper, a collection of curves of different sizes in wood and hard rubber, and several pieces of apparatus for describing the conic sections upon the blackboard in accordance with the well-known kinematic methods.

The collection of mathematical works in the library of the University is especially rich in sets of collected works of mathematicians. All the mathematical journals of any importance are regularly received, and the library possesses complete sets of most of them.

Mechanical Engineering

(See page 65)

Mechanics

ROBERT SIMPSON WOODWARD, C.E., Ph.D. ..... *Professor*
MICHAEL IDVORSKY PUPIN, Ph.D ..... *Adjunct Professor*
JOSEPH CLEMENT PFISTER, A.M ..... *Tutor*
WILLIAM HORATIO FREEDMAN, C.E., E.E ..... *Tutor*

Courses 1 and 3–9 may be pursued as minors for the degrees of A.M. and Ph.D. by candidates who have not taken such courses in undergraduate work; 3 hours a week for one half-year constitutes a minor for the degree of A.M., and 3 hours a week for two half-years a minor for the degree of Ph.D.

Time equivalent to three hours a week for four half-years devoted to Courses 10–18 is required as a major for the degree of Ph.D., and 3 hours a week for two half-years as a major for the degree of A.M. For a minor for the degree of Ph.D. a time equivalent to 2 hours a week for two half-years is required.

Courses

1—Analytical mechanics. As a text for this subject, Rankine's *Applied Mechanics* is used, attention being confined chiefly, however, to Part I, Principles of Statics (including hydrostatics); Part III, Principles of Kinematics; and Part V, Principles of Dynamics (including hydrodynamics). The text is supplemented by lectures on special topics, by written solutions and discussions of typical problems, and by demonstrations with the aid of apparatus. Particular attention is given to the doctrine of units and dimensions of units, and to problems affording actual applications of principles. 3 hours. Professor WOODWARD

Required of students in Civil, Mining, Mechanical, and Electrical Engineering; and it is recommended to all students who may desire to pursue the higher applications of the science in dynamical astronomy, electricity, magnetism, thermodynamics, elasticity, and physical geodesy.

2—Elementary mechanics. Loney's *Elements of Statics and Dynamics* is used as a text. This work is supplemented by demonstrations with apparatus, by lectures on the theory of dimensions and units, and by lectures, chiefly historical, on the higher applications and results of the science. 2 hours. Mr. PFISTER

Offered especially as an elective to students of the junior year in the College. It is designed to afford as good a knowledge of the science as can be had without the calculus. It assumes that the student has passed in Course 1 of the department of Mathematics, or its equivalent.

3—Theoretical mechanics. This requires familiarity with the elements of the differential and integral calculus. 2 hours. Mr. PFISTER

Designed to be supplementary to Course 2, and is offered as an elective to those desiring a knowledge of the general principles of the science rather than the special principles essential to engineering.

4—Thermodynamics, with special reference to its bearing on the theory of heat engines. 3 hours, first half-year. Professor PUPIN

Required of all students in Engineering.

5—Elementary thermodynamics and hydromechanics. Thermodynamics, 2 hours, first half-year; Hydromechanics, 2 hours, second half-year. Mr. PFISTER

Offered as an elective to students of the fourth year in the College, and to graduates. Its pre-requisite is Course 2, or an equivalent.

6—Theory of dynamo and motor (introductory), covering elements of the theory of electric, magnetic, and electro-dynamic potential, theory of electromagnetic and electro-dynamic induction, and its application to the theory of an ideal dynamo. 3 hours, first half-year. Mr. FREEDMAN

Required of students in Electrical Engineering.

7—Theory of direct-current dynamo and motor, covering Hopkinson's theory of dynamo and motor designing, and Froelich's method of dynamo and motor testing. 3 hours, second half-year. Professor PUPIN and Mr. FREEDMAN

Required of students in Electrical Engineering.

8—Theory of alternators and transformers. 3 hours, first half-year. Professor PUPIN

Required of students in Electrical Engineering.

9—Theory of variable currents, particularly the theory of polyphase and of high frequency and high potential currents. 3 hours, second half-year. Professor Pupin

Required of students in Electrical Engineering.

10—Advanced theoretical mechanics—General principles of statics and kinetics; methods of Lagrange, Hamilton, and Jacobi; application of the doctrine of energy to the interpretation of mechanical phenomena. Lectures, 2 hours. Professor WOODWARD

11—Theory of the potential function—General exposition of theory; derivation of equations of Laplace and Poisson, and theorems of Gauss, Green, and Stokes: with applications to problems in gravitation, hydromechanics, static electricity, and terrestrial magnetism. Lectures, 2 hours. Professor WOODWARD

12—Geodynamics—Amount and distribution of earth's mass; phenomena of precession, nutation, and oceanic tides; variation of density, gravity, and pressure within the earth; thermal properties, and secular contraction; mechanics of crumpling and crust movements. Lectures, 2 hours. Professor WOODWARD

13—Mathematical theory of elasticity—Analysis of stresses and strains and expression of strains in terms of stresses; discussion of potential energy of strained media and the constants essential to define them; theory of wave motion in elastic media, with applications to sound and light. Lectures, 2 hours. Professor WOODWARD

14—Maxwell's theory of electricity and magnetism—Lectures, 2 hours, first and second half-year. Professor PUPIN

14a—Theory of Bessel's functions and spherical harmonics—Lectures, 1 hour. Professor PUPIN

15—Electro-magnetic theory of light—Lectures, 3 hours, first half-year. Professor PUPIN

16—Advanced thermodynamics, including its applications to thermo-electricity and thermo-magnetism, physical chemistry, and caloric engines. Lectures, 2 hours. Professor PUPIN

17—Theory of oscillations. 2 hours. Professor PUPIN

Equipment

The department is supplied with various machines and models of machines for illustrating the so-called mechanical powers, with balances, dynamometers, air-pump, hydraulic pumps, and other apparatus to which reference is made in the course of theoretical studies. The department has a well-equipped electrical research laboratory under the direction of Professor Pupin. A limited number of advanced students can be accommodated in it. In addition to its own appliances, the department has access to the apparatus of the allied departments, especially that of the department of Electrical Engineering, thus affording the facilities of an extensive equipment to the students in advanced work.

Metallurgy

THOMAS EGLESTON, E.M., Ph.D., LL.D.....*Emeritus Professor of Mineralogy and Metallurgy*
HENRY MARION HOWE, A.M., B.S.....*Professor*
JOSEPH STRUTHERS, Ph.D.....*Tutor*
PARKER C. MCILHINEY, Ph.D.....*Assistant*

Courses in Metallurgy

1—General metallurgy—As an introduction to courses 2, 3, 3a, 4, and 5, history, definition of terms, calorimetry, refractory materials, furnaces, fuels (natural and artificial), chimneys, blast engines, regulators, hot-air stoves, tuyeres, pyrometry, furnace gas analysis. 3 hours lectures and 1 hour review, first half-year. Dr. STRUTHERS

Required of third-year students in the School of Mines and in the School of Chemistry. Students in Metallurgy have an additional hour per week during the first half-year, for review and practical work in the laboratory by Dr. STRUTHERS.

2—The metallurgy of iron and steel—Cast-iron: Roasting of ores, effect of impurities. construction of the blast furnace and auxiliary apparatus. Theory of the process, detailed discussion of practice, slags, calculation of charges, foundry practice, malleable cast-iron.

Wrought-ron: Properties, effect of impurities, puddling, other processes of making wrought-iron, direct processes.

Steel: General description, effect of impurities, cementation process, crucible process, acid open-hearth process, acid Bessemer process, basic open-hearth process, basic Bessemer process, methods of handling ingots, general mill-work, including reheating and rolling rails, tires, and wire rods. 3 hours lectures and 1 hour review, second half-year. Professor HOWE

Required of third-year students in the School of Mines and in the School of Chemistry. Students in the course of Metallurgy have an additional hour during the second half-year for review and practical laboratory work by Professor HOWE.

3—Metallurgy of the non-ferrous metals—Copper: Properties, effects of impurities, alloys, treatment of native copper and oxidized ores, refining, treatment of sulphide ores by the reverberatory and by the cupola method, Bessemerizing, wet processes, electrolytic processes. Certain desilvering processes are here included. 3 hours lectures and 1 hour review, first half-year. Professor HOWE

Required of the fourth-year students in the School of Mines. Students in the course of Metallurgy in the School of Mines have an additional hour per week for supplementary review and practical laboratory work by Professor HOWE and Dr. STRUTHERS.

3a—Lead, silver, gold, zinc, mercury, tin, bismuth, arsenic, antimony, nickel, cobalt, and aluminum. Properties of the metals and alloys, effect of impurities, discussion of ores and treatment, refining and casting. 3 hours lectures and 1 hour review, second half-year. Dr. STRUTHERS

Required of fourth-year students in the School of Mines. Students in the course of Metallurgy in the School of Mines have one additional hour per week for review and practical laboratory work by Dr. STRUTHERS

4—Advanced course in calorimetry—Determination of practical and theoretical values of various combustibles. 1 hour instruction and 3 hours laboratory practice, first half-year. Professor HOWE and Dr. STRUTHERS

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy. Pre-requisite or parallel: Course 1.

5—Advanced course in pyrometry—Determination of temperatures of furnace gases from combustion. 1 hour instruction and 3 hours laboratory practice, first half-year. Professor HOWE and Dr. STRUTHERS

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy. Pre-requisite or parallel: Course 1.

6—Microscopic study of metals—Cutting, grinding, and preparing specimens and examining them microscopically. 1 hour instruction and 6 hours laboratory practice, second half-year. Professor HOWE and Dr. STRUTHERS

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy. Pre-requisite or parallel: Course 2.

7—Heat treatment of steel and other metals. Physical, chemical and microscopic examination of the metals treated. 1 hour instruction and 6 hours laboratory practice, second half-year. Professor HOWE

Open to candidates for the degree of A.M. or Ph.D. whose major subject is Metallurgy. Pre-requisite or parallel : Course 2.

Equipment

Beside a number of models of blast furnaces, hot blast-stoves, blowers, Bessemer works, lixiviation works, and rolls, a very large metallurgical collection, of about 3,000 specimens, many of which have been analyzed, is open to the inspection of the students and is used to illustrate the lectures. The specimens represent every stage of the more important metallurgical processes.

While the chief aim of the course is to give a clear understanding of metallurgical principles, yet both to facilitate this by making the subject concrete and incidentally to familiarize the student with the present and hence the best practice, the lectures are very fully illustrated by drawings of modern apparatus. The present very valuable collection, containing a large number of lecture diagrams and several hundred tracings, will, so far as possible, keep up with progress in the art, and will aim particularly to show the general and essential features of the various appliances.

A special effort is made to illustrate the lectures by actual demonstrations of metallurgical reactions and operations.

The lectures are supplemented with metallurgical laboratory work in the heat-treatment of metals, in roasting and lixiviating ores, in the use of modern pyrometers and calorimeters, and other like work.

The metallurgical laboratory, in addition to a general equipment for analytical work, has a number of furnaces for heat investigations, various modern calorimeters, calorimetric, optical, photometric, and thermo-electric pyrometers ; apparatus for analyzing furnace gases ; equipment for preparing sections of metals ; lathes, grinders, polishers, and microscopes adapted for examination of opaque objects ; a collection of apparatus for obtaining direct pressure and pressures by the application of heat ; and a machine constructed by Dr. Egleston, for the study of physical properties of metals.

In July, 1896, a summer school in practical metallurgy under the personal supervision of Dr. Struthers was held at Butte, Montana, and all the smelting plants at Butte and at Anaconda were visited and studied. The students in the courses of Mining Engineering and Metallurgy devoted their time to the study of the smelting of copper and silver ores in that district.

In July, 1897, the second year of the summer school in practical metallurgy was held at Chicago and Pittsburg under the direct charge of Dr. Struthers. The subjects of the manufacture of iron and steel were selected, and the entire plants of the Illinois Steel Company, the Carnegie Steel Company, and the Black Diamond Steel Company were visited and studied in detail. Minor trips were made to lead smelters and refiners and to coking plants.

Instruction was given by class and individually, and the students were required to make complete descriptions of the various processes in use, involving sketches of furnaces in detail. Note-books were freely used and corrected daily.

As an application of the lectures, the students in the course in Metallurgy in the School of Mines are required to work out a project, and to present working drawings and estimates for the erection of works to treat a given ore under stated conditions. The problems given are those which require solution in some part of the United States.

Mineralogy

THOMAS EGLESTON, E.M., Ph.D., LL.D.....*Emeritus Professor of Mineralogy and Metallurgy*
ALFRED J. MOSES, E.M., Ph.D.....*Professor*
LEA MCI. LUQUER, C.E., Ph.D.....*Tutor*
HERBERT P. WHITLOCK, C.E.....*Assistant*

Courses

1—Blowpipe analysis—The tests for 40 elements and the qualitative analysis of minerals, alloys, and slags. Two afternoons a week laboratory, one half-year. Professor MOSES, Dr. LUQUER, and Mr. WHITLOCK

Required of first-year students in the Schools of Mines and Chemistry. Open to students in the College who have taken Chemistry 1.

2—Crystallography—History, general characters, laws, forms, simple measurements, and calculations. 2 hours lectures and conferences, one-half year. Professor MOSES

Required of first-year students in the Schools of Mines and Chemistry. Open to students in the College who have taken Physics 1.

3—General mineralogy—First half-year: definitions, principles, and laws, crystal forms, appearance and properties of common minerals, practical determination of minerals. Second half-year: physical properties of crystalline substances with practice in elementary determination of physical constants and measurement and delineation of geometric form. 2 hours lectures, 1 afternoon laboratory. Professor MOSES

Open to students in the College who have taken Chemistry 1 and Physics 1.

4—Descriptive and determinative mineralogy—Study of 200 important species, their properties, uses, and methods of determination. 2 hours lectures, 3 hours laboratory, second half of first year and first half of second year. Professor MOSES and Dr. LUQUER

Required of first- and second-year students in the Schools of Mines and Chemistry. Open to juniors and candidates for the degree of A.M., or for the degree of Ph.D., in their first year, whose minor subject is Mineralogy. Pre-requisite: Courses 1 and 2.

5—The minerals of building-stones—Study of common species, their properties, methods of determination, and their economic effect on building-stones. 2 hours lectures, and conferences. Dr. LUQUER and Mr. WHITLOCK

Required of second-year students in the course of Civil Engineering. Open to students in the College who have taken Chemistry 1, and to candidates for the degree of A.M. as a half-minor course.

6—Optical mineralogy—Principles, apparatus, and distinguishing characters of minerals in thin sections. 2 hours lectures and 1 afternoon for two months. Dr. LUQUER

Required of second-year students in the School of Mines. Open to candidates for the degree of A.M. as a half-minor course, supplementing Course 5, or to students in the College. Pre-requisite: Course 5, or equivalent.

7—Optical mineralogy—Longer course including principles, apparatus, and distinguishing characters of minerals in sections ; determination of optical constants ; study of microstructure ; microchemical tests ; separation of constituents and preparation of sections. 12 hours for one year, or 6 hours for two years. Dr. LUQUER

Open to candidates for the degree of A.M. whose major subject is Mineralogy, or to candidates for the degree of Ph.D. whose minor subject is Mineralogy. Pre-requisite : Course 3, or equivalent.

8—Physical crystallography—Short laboratory course in determination of physical characters of crystals. 1 hour, one half-year. Professor MOSES

Required of fourth-year students in Organic Chemistry. Pre-requisite : Course 2, or equivalent.

9—Physical crystallography—Optical, thermal, electric, and magnetic properties of crystals with experiments ; the geometric form with measurement and delineation ; the effects of mechanical forces ; theories of structure. 12 hours for one year, or 6 hours for two years. Professor MOSES

Open to candidates for the degree of A.M. whose major subject is Mineralogy, or to candidates for the degree of Ph.D. whose minor subject is Mineralogy. Pre-requisite : Course 3, or equivalent.

10—Physical crystallography—Longer course including study of the crystals of some group. 12 hours for two years. Professor MOSES

Open to candidates for the degree of Ph.D. whose major subject is Mineralogy. Pre-requisite : Course 3, or equivalent.

11—Mineralogy—Study of assigned group or species. Professor MOSES

Open to candidates for the degree of Ph.D. whose major subject is Mineralogy. Pre-requisite : Course 3, or equivalent.

NOTE—Course 7 is especially a minor course for geologists, Course 8 a minor course for chemists, and Courses 9 and 10 major courses for mineralogists.

Equipment

The work of the students in the college courses and in general mineralogy is performed in the blowpipe laboratory, a large room with conference tables and seats for about seventy-five men, and in the adjoining lecture room, in which are the student collections of crystal models and minerals. Students in optical mineralogy use a separate room with north light, and for crystal measurements and monochromatic light determinations, there is provided a large dark room.

The department is equipped for work in the university courses offered.

The mineralogical collection consists of about 30,000 labelled specimens, and includes a systematic collection, an economic collection of ores, building materials, and minerals used in chemical industries, a collection illustrating the genesis and alteration of minerals, a collection illustrating the character of minerals, and small collections of artificial minerals and New York City minerals. There are in the lecture and conference room a separate student collection and a lecture collection. Several thousand unlabelled specimens are used in determinative work. The department possesses also about 500 sections of minerals, and 1500 crystal models in wood and glass.

Among the collections of minerals that have been presented to the department from time to time are some that possess historic value, among which

may be mentioned the Gillmore collection, made in Paris under the direction of the Abbé Hauy, and presented by the late Gouverneur Kemble of West Point; a collection of Schulsberg (Wis.) stalactites, exhibited at the Sanitary Fair; a fine suite of Russian minerals, presented by the Czar; a collection of American minerals, presented by the late Geo. T. Strong; two of the finest cerussites in the world; the Julian collection of minerals from Chesterfield, Mass.; the famous collection of Professor How, of King's College, Nova Scotia; and a very valuable collection made by Dr. Egleston in Japan.

In addition, a large number of gifts have been received, and these have been supplemented by careful purchasing and exchanging.

Mining

HENRY S. MUNROE, E.M., Ph.D. ..... *Professor*
ROBERT PEELE, E.M. ..... *Adjunct Professor*
FRANK C. HOOPER, Met.E. ..... *Assistant*

Courses

1—Excavation and tunnelling. 3 hours, first half-year. Professor PEELE

Excavation of earth—tools and methods employed; support of excavations; special methods for quicksand and other water-bearing material; steam shovels and other mechanical excavators; handling and transportation of excavated material; tables of comparative costs. Dredging—description of machines and methods for canal, river, and harbor work; handling of dredged material; costs of dredging. Explosives—black powder, nitro-glycerine and its compounds, and other high explosives; their manufacture and use. Excavation of rock—methods of drilling and blasting; mammoth blasts; submarine blasting. Quarrying—plant and methods for quarrying different rocks. Tunnelling—methods for driving and timbering; handling and transportation of excavated material; drainage and ventilation of tunnels; submarine tunnels; permanent lining of tunnels; accidents in tunnelling; location of tunnels.

Required of second-year students in the courses of Mining Engineering and Metallurgy.

2—Boring and shaft-sinking. 3 hours for 3 months, second half-year. Professor PEELE

Boring—Methods and appliances for small depths and for deep boring; cable tool or oil-well method; boring with diamond drill, for prospecting and other purposes; survey of bore-holes. Shaft-sinking—Methods and tools employed in soft material and in rock; sinking linings or drop-shafts, and other special methods of sinking in water-bearing formations and quicksand; drainage of shafts; handling and hoisting of excavated material. Shaft timbering and other systems of lining employed in special cases.

Required of second-year students in the courses of Mining Engineering and Metallurgy.

2a—Mining and support of mine excavations. 3 hours for 1 month, second half-year. Professor MUNROE

Theoretical considerations, methods of breaking ground in coal and metal mining, and support of mine excavations by pillars of mineral, by timbering, by masonry, and by rock filling.

Required of second-year students in the courses of Mining Engineering and Metallurgy.

3—Exploration, development, and methods of working. 2 hours. Professor MUNROE

Mineral deposits, characteristics of beds, masses, veins, and other deposits, and the irregularities and disturbances to which they are subject, as affecting the work of exploration and mining. Examination and survey of mineral properties; relation of topography to geological

structure; construction of maps and sections and tracing of probable outcrops as a guide to exploration. Prospecting by ditches, pits, and deep boring. Development; choice of methods; location of openings. Working of deposits and support of excavations; methods applicable to deposits of different thickness, inclination, and character. Coal mining; vein mining; working of thick deposits and soft-ore bodies. Salt mining. Surface workings. Hydraulic mining.

Required of third-year students in the courses of Mining Engineering and Metallurgy.

4—Ore dressing, milling, and the mechanical preparation of coal. 2 hours. Professor MUNROE

The general principles and theory of dressing; preliminary operations; hand dressing; cleansing; crushing; jigging with and without preliminary sizing; slime concentration; milling of gold and silver ores; and description of typical dressing works and coal-washing plants in this country and abroad.

Required of third-year students in the courses of Mining Engineering and Metallurgy.

5—Ore-dressing laboratory. Afternoon work for three weeks, second half-year. Professor MUNROE and Mr. HOOPER

During the second half of the fourth year students are instructed in the mechanical assaying of ores and coal by hand jigging and vanning, and in the adjustment and operation of concentrating machines.

Required of fourth-year students in the courses of Mining Engineering and Metallurgy.

6—Mine engineering. 2 hours first half-year and 1 hour second half-year. Professor MUNROE

Extraction; methods and machinery; handling mineral in working places; underground haulage. Surface handling and transportation; arrangements for loading and unloading cars and vessels, and for storing of minerals. Mineral railroads. Common roads. Drainage; sources of mine waters; methods for the control and raising of water; dams; drainage; levels. Water supply. Ventilation; air of mines; mine gases; methods of ventilation; control and measurement of air currents. Accidents to men in shafts, levels, and working places; fire-damp and dust explosions; mine fires; inundations; rescue and relief of men.

Required of fourth-year students in the courses of Mining Engineering and Metallurgy.

7—Mine plant. 3 hours first half-year and 2 hours second half-year. Professor PEELE

Descriptions and critical discussion of the machinery employed in hoisting, drainage, and ventilation; air-compressing plant; types of plant best adapted to different conditions; erection and care of machinery; accidents, breakage, and repairs.

Lectures are given also upon the design of timber, masonry, and iron construction, headframes, hoisting cages, ventilating fans, mine buildings, and other portions of mining plant.

Required of fourth-year students in the courses of Mining Engineering and Metallurgy.

7a—Mine constructions. 1 hour second half-year. Professor PEELE

Building-stones; brick; limes; cements and concretes. Foundations in various soils; masonry, and timber construction, with special reference to mine work; mine buildings; trestles.

Required of third-year students in the courses of Mining Engineering and Metallurgy.

8—Design of mine plant. 5 afternoons first half-year and 4 afternoons second half-year. Professor PEELE and Mr. HOOPER

The students are assigned problems involving the design and construction of mine plant, in connection with the development of a mine. This work supplements the lectures on the design of mining machinery, involving reading and study, and the preparation of working drawings, bills of material, specifications, and estimates.

The work is done under constant supervision and advice in the draughting room.

Required of fourth-year students in the course of Mining Engineering.

9—Mine surveying. 1 hour second half-year. Professor MUNROE

This course supplements the practical work in underground surveying in connection with the summer school in mining. It includes the general principles of underground surveying, the construction of mine maps and models of mine workings, the measurement of contracts, the location of lines for new work.

Required of fourth-year students in the courses of Mining Engineering and Metallurgy.

10—Administration and mine accounts. 1 hour second half-year. Professor MUNROE

Administration, organization, and business management, mine accounts, and cost sheets. Examination and valuation of mines.

Required of fourth-year students in the courses of Mining Engineering and Metallurgy.

Summer School

11—The summer school of practical mining is held in June and July, at some mine or mines selected for the purpose, in the vacation between the third and fourth years, and lasts six weeks. Professor PEELE and Assistants

The course of instruction includes three weeks detailed study of the plant and methods of working at some important mine or mines; one week practical mine surveying; one week excursions to other mines and mining regions, and one week geological work, surface and underground.

The course of study includes the subjects of shaft-sinking, drifting, stoping, timbering, underground haulage, hoisting, mine drainage, ventilation, surface plant and machinery, mine buildings, shops, houses, water supply, drainage, organization, and administration. The students are divided into small squads, and assigned each day to a working gang of miners, or to a definite portion of the mines, for the study of some definite subject. Each squad of students is visited several times during the day by the instructor, who supplements the explanations of the miners, and indicates subjects demanding special study and observation. Manual labor, and the acquirement of manual dexterity by the student, are subordinated to the development of his powers of observation, and to the carefnl and critical study of the work going on about him, and the recording of his observation and study in notes and sketches taken on the spot. The students' note-books are examined and criticised each evening. By thus carefully systematizing and directing the work of the student his time is economized, and as much ground is covered in a week as would be in a month under ordinary circumstances, and the work is done more thoroughly.

This summer school has been in successful operation since 1877, and has proved itself an indispensable adjunct to the course of instruction. It bears the same relation to the study of mining as laboratory work to the study of chemistry or physics, or clinical instruction and hospital practice to the study of medicine.

In 1895 the summer school was held at Central City, Colorado, in the Gilpin County gold district. The regular work was done in the Gunnel, Saratoga, and Gregory-Bobtail mines, and in several of the Black Hawk gold mills. Visits were made also to other gold mines, in the vicinity; to the Pelican-Dives silver mine, at Silver Plume, sampling works at Georgetown, and finally to two of the large smelting and reduction works near Denver.

The summer school of 1896 was held in the Butte, Montana, copper and silver mining district. After completing the regular detail work in the Gagnon and Nettie mines, the class visited the Parrot, Anaconda, Silver Bow, and Rarus mines, also all the larger smelters in the vicinity of Butte.

In 1897 the summer school was held in Michigan. The detail work, occupying four weeks, was carried on in the mines of the Pittsburgh and Lake Angeline Iron Company. Short visits were then made to the Lake Mine of the Cleveland Cliffs Iron Company, and the Lake Superior Section Sixteen mine, and finally a few days were spent in the copper district, at the Atlantic mine and mill, the surface plants of the Calumet and Hecla and the Tamarack mines, and the Calumet and Hecla concentrating mills.

Required of students in the courses of Mining Engineering and Metallurgy, in the vacation between their third and fourth years.

Optional to the same students, if without conditions, in the vacation between the second and third years.

Graduate Courses

Special courses, consisting of personal instruction, reading, and experimental investigation, will be arranged for advanced students according to their individual needs. These courses vary in difficulty and in the amount of time necessary, according as the student is a candidate for the degree of A.M. or Ph.D., and according as he pursues Mining as a major or a minor subject. The following are suggested :

12—Coal mining. 2 hours.

13—Ore mining. 2 hours.

14—Coal washing. 1 hour.

15—Ore dressing. 1 hour.

16—Examination of a mineral property, or a mine. 4 to 6 weeks devoted to field and underground work in the summer school of practical mining, with conferences at convenience of professor.

17—Examination of a coal-washing plant or an ore-dressing plant. 4 to 6 weeks' work in the mill and in the laboratory, with conferences.

18—Special problems and original investigations in ore dressing and mining as assigned. With conferences, laboratory and field work as required.

Equipment

Mining Museum—The subject of mining is illustrated by collections of mine maps, working drawings, diagrams, photographs, models, mining tools, mining machines, ores and products of dressing works, and surveying apparatus.

Maps of coal and metal mines of this and other countries. Working drawings, diagrams, and photographs of mine plant, and of mining and dressing machinery. Models of mines; of shafts, tunnels, and galleries, illustrating methods of sinking, driving. timbering, tubbing, and walling. Models of deep-boring apparatus, shaft head gear, hoisting engines, man engines, pumps, ventilators, safety cages, mine cars, crushers, stamps, ore washers, shaking tables, and other dressing machines. Mining tools and mining machines; picks, shovels, sledges, drills, blasting apparatus, lamps, safety lamps, anemometers, hand-power and machine drills. Ores and dressing products from Clausthal, Lake Superior, Missouri, and elsewhere. Surveying instruments, geological compasses and clinometers, attraction compasses, dipping needles, hanging compasses and arcs, transits, lamp signals, rods, and apparatus for plumbing and measuring shafts.

Lecture Illustrations—The lectures on mining are illustrated by about 2000 blue prints from negatives made for the purpose. These prints are collected in scrap-books illustrating the different courses of lectures, and each student has the use of one of these books for reference during the lecture, and for home study. These blue prints have many advantages over the usual form of lecture illustrations by lantern-slides or wall diagrams. The latter are, however, used when necessary to supplement the blue prints.

Ore-Dressing Laboratory—Contains crushing and concentrating machinery, and the necessary apparatus for sampling and testing ores.

Mines and Dressing Works—Numerous coal, iron, and other mines, slate

and stone quarries, are easily accessible from New York in from one to four hours by rail. Magnetic iron mines in New York, New Jersey, and Pennsylvania ; hematite mines and stone quarries in the same States, and in Connecticut ; anthracite mines in Pennsylvania ; zinc mines in New Jersey and Pennsylvania. New York and adjacent States produce each year more than half the pig-iron and coal, and over one third of the total value of the mineral product of the whole country. New York City is the headquarters of numerous corporations operating mines and metallurgical works in this and other countries, and is one of the most important mining centres of the world. Within a radius of one hundred miles of New York City may be studied the best practice in mining under most varied conditions, and the most modern and effective mining and dressing machinery in the country. By going a little farther one may reach the bituminous coal regions and natural gas and oil fields in one direction, and the pyrites deposits and granite and marble quarries of Vermont and Canada in the other ; while the excursions of the summer class in mining extend as far as the gold, silver, copper, and iron regions of Colorado, Montana, and Michigan.

Music

EDWARD ALEXANDER MACDOWELL, Mus. Doc. ..... *Professor*

The courses in this department fall into two divisions : the technic of musical composition, and general musical culture. The aim of the technical course is to teach music theoretically and scientifically with a view to training musicians competent to teach and to compose. In the general courses, music is treated historically and æsthetically as an element of liberal culture ; the technical side of the art is explained and the lectures are supplemented by illustrations, analysis, and some practical class work, such as cultivation of the sense of pitch, rhythm, and musical dictation.

Courses

1—General musical culture. The origin of music and its relation to speech and the emotions. Primitive music and instruments. The history of music from the earliest times up to the XIXth century. Acoustics ; harmony, counterpoint, and fugue ; form ; analysis ; musical instruments in use up to the present century, with practical illustrations ; musical dictation and cultivation of the sense of pitch and rhythm. 2 hours. Professor MACDOWELL

Open to all properly qualified university students, and, with the consent of the dean of the College, to all properly qualified students of the College.

2—This course, which is a continuation of Course 1, treats of the development of forms, the song, romanticism, instrumental development and the composers for piano-forte, revolutionary influences, the virtuoso, modern orchestration and symphonic forms, the music drama, impressionism versus absolute music, and color versus form, the relationship of music to other arts, musical criticism. 2 hours. Professor MACDOWELL

Courses 1 and 2, while outlining the purely technical side of music, aim at giving a general idea of it from its historical and æsthetic side.

3—Lectures and class-work. This course treats of general theory, dictation, harmony, comprising chords and their mutual significance, altered chords, suspensions, modulation, imitation, analysis, and the commencement of composition in the smaller forms. 2 hours. Professor MACDOWELL

Open to all properly qualified university students, and, with the consent of the dean of the College, to all properly qualified students of the College. This course, in connection with Courses 4 and 5, constitutes a three years' study of the subject.

4—Lectures and class-work. This course treats in the first half-year of strict counterpoint, canon, choral figuration and fugue. In the second half-year of free counterpoint, canon and fugue, analysis, commencement of composition in the larger forms. The first half-year is confined to vocal writing, and, with Course 3, may be considered as a preparation for the second half-year, which includes instrumental writing. 2 hours. Professor MACDOWELL

Open to all students who have taken Course 3, and to such persons, otherwise qualified, as can demonstrate to the professor of Music, by examination or otherwise, that they are competent to profit by it.

5—Lectures and class-work, with practical illustrations. This course treats of free composition, analysis, instrumentation, symphonic forms. In this course all the orchestral and other instruments are considered individually and collectively, and their technique, possibilities, and limitations are demonstrated. 2 hours. Professor MACDOWELL

Open to all students who have taken Courses 3 and 4, and to all persons otherwise qualified who can demonstrate to the professor of Music, by examination or otherwise, that they are competent to profit by it.

Equipment

A collection of music and books of reference is placed at the disposal of students. It includes orchestral scores by Haydn, Mozart, Beethoven, Weber, Mendelssohn, Schumann, Raff, Liszt, Goldmark, Godard, St. Säens, Nicodé, Tschaïkowsky, Rimsky-Korsakow, Wagner, the piano-forte classics and vocal music, theoretical works and histories by Riemann, Langhans, Rowbotham, Savard, Bazin, Gavaert, and many others, besides biographical works.

Neurology

M. ALLEN STARR, M.D. ..... *Professor*
FREDERICK PETERSON, M.D. ..... *Chief of Clinic*
WILLIAM H. CASWELL, M.D. ..... *Clinical Assistant*
MORTON R. PECK, M.D. ..... *Clinical Assistant*
PEARCE BAILEY, M.D. ..... *Clinical Assistant*
C. E. ATWOOD, M.D. ..... *Clinical Assistant*
A. W. FERRIS, M.D. ..... *Clinical Assistant*
ARCHIBALD CAMPBELL, M.D. ..... *Clinical Assistant*
E. S. STEESE, M.D. ..... *Clinical Assistant*
R. H. CUNNINGHAM, M.D. ..... *Clinical Assistant*
L. STIEGLITZ, M.D. ..... *Clinical Assistant*
A. B. BONAR, M.D. ..... *Clinical Assistant*
P. C. GOODHARDT, M.D. ..... *Clinical Assistant*

Courses

1—The diseases of the mind and nervous system—Didactic lectures. 1 hour for five months with demonstrations, illustrated with the magic-lantern, of the pathology of nervous diseases. Professor STARR

Required, in the third and fourth years, of candidates for the degree of M.D.

2—Clinical lectures at the Vanderbilt Clinic—At these clinics all forms of nervous disease, including insanity, are demonstrated. During the months of didactic instruction the clinics are so arranged as to illustrate the clinical side of the subject lectured upon. 1 hour. F. at 2 P.M. Professor STARR

Required, in the fourth year, of candidates for the degree of M.D.

3—Practical instruction in neurology—"Section teaching," by the chief of Clinic, at which a division of fifteen students is taught the practical examination of nervous patients, including electro-diagnosis and electro-therapeutics. 10 lessons for each student in the Vanderbilt Clinic. Dr. PETERSON

Required, in the fourth year, of candidates for the degree of M.D.

4—Insanity—4 clinics at the Ward's Island Insane Asylum. S. in October 2 P.M. Dr. PETERSON

Optional, in the fourth year, for candidates for the degree of M.D.

Normal Histology

(See page 117)

Obstetrics

JAMES W. MCLANE, M.D.....*Professor*
ERVIN A. TUCKER, M.D.....*Tutor*
JAMES D. VOORHEES, M.D.....*Instructor*

Courses

1—Theory and practice of obstetrics—Lectures. 3 hours from October 1 to March 15. Professor MCLANE

Required, in the third year, of candidates for the degree of M.D.

2—Recitations and demonstrations—1 hour, for each student in the second year of the new curriculum. One sixth of the class receives instruction daily, by recitations and demonstrations, in which specimens and models from the anatomical, physiological, and pathological museums are used. Dr. TUCKER

Required, in the second year, of candidates for the degree of M.D.

3—Practical instruction at the Sloane Maternity Hospital—Members of the graduating class in medicine are required each to attend at this hospital a certain number of cases of labor. For this purpose the students of the fourth year are divided, at the beginning of the academic year, into sections of six, each section remaining on duty for two weeks. During this time they are furnished with lodgings, free of charge, in the hospital, so that they may be summoned quickly to cases of emergency. Daily bedside instruction is given by the instructor, who is the resident physician at the Sloane Hospital, and an examination on the work of the week is held there by him every Saturday. A daily clinical lecture is also given at the hospital, and instruction upon the manikin. Dr. VOORHEES

Required, in the fourth year, of candidates for the degree of M.D.

The Sloane Maternity Hospital

(See table of contents.)

This is upon the grounds of the College of Physicians and Surgeons, and the service of the hospital is under the exclusive direction of the professor of Obstetrics, the instructor being also the resident physician, as above stated.

The number of deliveries averages over nine hundred a year. These, with the obstetric operations, and the subsequent treatment of women and infants, afford invaluable bedside experience, such as is offered at no other medical school in this country.

Ophthalmology

HERMAN KNAPP, M.D. ..... *Professor*
CHARLES H. MAY, M.D. ... *Chief of Clinic and Instructor in Ophthalmoscopy*
JOHN HERBERT CLAIBORNE, M.D. ..... *Clinical Assistant and Instructor in Refraction and Motility*
WARD A. HOLDEN, M.D. ..... *Clinical Assistant*
HENRY H. TYSON, M.D. ..... *Clinical Assistant*
JACKSON M. MILLS, M.D. ..... *Clinical Assistant*
CURTIS B. CARTER, M.D. ..... *Clinical Assistant*

Courses

1—Clinical lectures, at the Vanderbilt Clinic, upon the diseases of the eye—In selected cases the diagnosis is made, treatment applied, and minor operations are performed before the class.

After the lectures, as opportunity offers, microscopic demonstrations of the pathological histology of the eye are made by Dr. Holden. 1 hour. Tu. at 2 P.M. Professor KNAPP

Required, in the third year, of candidates for the degree of M.D.

2—Practical instruction, at the Vanderbilt Clinic, in the use of the ophthalmoscope—6 lessons for each student. Dr. MAY

Required, in the third year, of candidates for the degree of M.D.

3—Practical instruction, at the Vanderbilt Clinic, in the refraction and motility of the eye—6 lessons for each student. Dr. CLAIBORNE

Required, in the third year, of candidates for the degree of M.D.

4—Hospital clinics in the diseases and the operative surgery of the eye, at the New York Ophthalmic and Aural Institute, 44 and 46 East 12th Street. Wed. from 2 to 3.40 P.M. To these clinics the students are invited in sections. Professor KNAPP

Required, in the third year, of candidates for the degree of M.D.

ORIENTAL LANGUAGES

All the courses in Oriental Languages are open to women on the same terms as to men. Women wishing to enter any of the courses as special students or as candidates for a degree must register through Barnard College.

Semitic Languages

RICHARD J. H. GOTTHEIL, Ph.D. ..... *Professor*
ABRAHAM YOHANNAN, A.M. ..... *Lecturer*

Courses 1, 2, 3, 4, 10, 12, 13, 15, 16, and 17, and the seminar, are open to seniors in Columbia College and to university students; Courses 5, 6, 7, 8, 9, 11, 14, to advanced students only. Courses 1, 2, 4, 10, 11, 12, 13, 15, 16, are open also to juniors in Columbia College.

All the courses in Semitic Languages except the seminar are open to auditors.

Courses in Hebrew

The course in Hebrew extends over three years. The first year is devoted to the study of the elements; the second, to the study of the syntax and the acquiring of ease in translating from Hebrew into English and from English into Hebrew; the third, to a critical study of one or more books of the Bible.

The attention of students in the College is directed to the fact that it is desirable that those who intend entering a theological seminary after graduation shall have had at least two years' previous training in Hebrew. Opportunity for this training is given the students of Columbia College, Hebrew being an elective in both the junior and senior classes.

1—Biblical Hebrew, elementary course. Davidson's *Introductory Hebrew Grammar*. 2 hours. Professor GOTTHEIL

2—Biblical Hebrew, second course. Reading and interpretation of the Book of Isaiah in connection with Gesenius' *Hebräische Grammatik* (26th ed.) and Driver's *Hebrew Tenses* (3d ed.). 2 hours. Professor GOTTHEIL

3—Biblical Hebrew, third course. First half-year: Critical study of the Book of Job (chaps. 32–42). Second half-year: Lectures on Semitic archæology and its bearing upon the study of the Bible. 2 hours. Professor GOTTHEIL

4—Rabbinical Hebrew. Selected readings from post-Biblical Hebrew poetry. 2 hours, first half-year. Professor GOTTHEIL

5—Rabbinical Hebrew. Selected readings (in Hebrew and Arabic) from the Jewish philosophical writings of the Middle Ages. 2 hours, second half-year. Professor GOTTHEIL

For Courses 4 and 5, a previous knowledge of Biblical Hebrew is demanded.

6—Rabbinical Hebrew. Lectures on *Post-Talmudic Hebrew Literature*, part ii. 2 hours, second half-year. Professor GOTTHEIL

Courses in Semitic Epigraphy

7—Interpretation of the Phœnician inscriptions, with an introduction to Semitic palæography and the history of the alphabet. Professor GOTTHEIL

Given in 1899–1900.

8—Interpretation of the Aramæan inscriptions of Sinjirli (*Mittheilungen aus den Orientalischen Sammlungen*, Heft XI, Berlin, 1893), and of the *Corpus Inscriptionum Semiticarum*, vol. ii. 1 hour. Professor GOTTHEIL

9—Interpretation of the Sabæan and Hymyaritic inscriptions contained in the *Corpus Inscriptionum Semiticarum*, vol. iv. Professor GOTTHEIL

Given in 1898–99.

For Courses 7 and 8, which are open to advanced students only, a previous knowledge of Hebrew and Aramæan, respectively, is demanded; for Course 9, a previous knowledge of Arabic.

Courses in Assyrian

10—Elementary course. Study of the Syllabary, with readings from selected portions of Abel and Winckler's *Keilschrifttexte zum Gebrauch bei Vorlesungen*, and the study of Delitzsch's *Assyrian Grammar*. 2 hours. Professor GOTTHEIL

11—Advanced course. The Babylonian accounts of the creation and flood (Paul Haupt, *Das Babylonische Nimrodepos*, and Fr. Delitzsch, *Assyrische Lesestücke*). Assyrian Syllabaries. Professor GOTTHEIL

Given in 1898–99.

Courses in Arabic

12—Elementary course. Study of Socin's *Arabic Grammar* with exercises in translating Arabic into English and English into Arabic. 2 hours, first half-year. Professor GOTTHEIL

13—Second course. Study of Brünnow's *Chrestomathie aus arabischen Prosaschriftstellern*. 2 hours, second half-year. Professor GOTTHEIL

14—Third course. Advanced work. First half-year: Interpretation of the Muallakāt. Second half-year: Interpretation of the Arabic Grammar (al Mufassal) of Zamachshari. 2 hours. Professor GOTTHEIL

Courses in Syriac

15—First course—First half-year: Nöldeke's *Syrische Grammatik*, in connection with selected readings from the Peshitta. Second half-year: Interpretation of selected portions of the *Acta Martyrum* (ed. Bedjan). 2 hours. Professor GOTTHEIL and Mr. YOHANNAN

16—Second course—First half-year: Interpretation of Lagarde's *Analecta Syriaca*. Second half-year: Interpretation of the Syriac Grammar (*Kethābhā dhesemhē*) of Bar Hebraeus. 2 hours. Professor GOTTHEIL

[In case there should be a demand for instruction in Modern Syriac, Mr. Yohannan will make arrangements for a course.]

Course in Ethiopic

17—Principles of the grammar and easy readings in connection with Prætorius' *Aethiopische Grammatik*. 1 hour. Professor GOTTHEIL

Semitic Seminar

18—The seminar will take up the study of current questions in Semitic philology with especial reference to modern methods of linguistic research.

Tu. evening at 8.15.

Attendance at the seminar meetings will be obligatory upon candidates for the degrees of master of arts and of doctor of philosophy whose major subject is in Semitic Languages. The meetings are open also to advanced students one of whose minor subjects is in the department of Semitic Languages.

Course in Turkish

First half-year: Principles of the Grammar, in connection with the study of A. Müller's *Türkische Grammatik* (*Porta Linguarum Orientalium*, pars xi). Second half-year: Exercises in Turkish conversation and in the reading of Turkish newspapers. 2 hours. Mr. YOHANNAN

Courses in Semitic Languages at the Union Theological Seminary

A detailed announcement of these courses is given in the circular issued by the division of Oriental Languages. Such courses may be counted as part of the work required for the degrees of master of arts and doctor of philosophy.

Indo-Iranian Languages

A. V. Williams Jackson, L.H.D., Ph.D.....*Professor*
Abraham Yohannan, A.M.....*Lecturer*

The courses of instruction in this department are intended to be introductory to the study of comparative philology, and of the history of religion, as well as to the study of the history, antiquities, and literature of India and Persia and also of Armenia. The course arranged for beginners in Sanskrit, Indo-Iranian 1, may be taken with advantage in connection with any of the Latin, Greek, or other linguistic courses.

Courses 1 and 2 are open to seniors in Columbia College and to university students. Course 1 may also be taken as an elective by juniors in the College. Courses 3, 4, 5, 6, 7, 10, 11, and 12 are open to advanced students only. Courses 8 and 9 are open to students pursuing one other course in the department.

Courses 1, 2, 3, 4, and 11 are intended to be given each year. Courses 5, 6, 7, 8, 9, and 10 form a supplementary series. Two of this series will be given each year according to the requirements of the students in attendance.

All the courses in Indo-Iranian Languages are open to auditors.

Courses

1—Sanskrit, elementary course. Whitney's *Grammar*, Perry's *Primer*, Lanman's *Reader*. 3 hours. Professor Jackson

2—Avestan, elementary course. Grammar and reading of texts. Jackson's *Avesta Series: Part I, Grammar; Part II, Texts.* 2 hours. Professor Jackson

3—Sanskrit, advanced course. First half-year: Bhartrihari with the native Commentary; or a Sanskrit drama. Second half-year: Introduction to the study of the Veda. 2 hours. Professor Jackson

4—Avestan, advanced course. Interpretation of texts, antiquities, and literature. Geldner's *Text of the Avesta*. 2 hours. Professor Jackson

5—Pālī, elementary course. E. Müller's *Simplified Pālī Grammar*, Elwell's *Nine Jātakas*. 1 hour. Professor Jackson

Not given in 1897–98

6—Old Persian cuneiform inscriptions. Spiegel's *Die altpersischen Keilinschriften*, Bartholomae's *Handbuch der altiranischen Dialekte*, Weissbach and Bang's *Die altpersischen Keilinschriften*. 1 hour, first half-year. Professor Jackson

This course is to run parallel with the advanced Avestan.

7—Pahlavi, introductory course. C. de Harlez's *Manuel du Pehlevi*. 1 hour, second half-year. Professor JACKSON

This course is to run parallel with the advanced Avestan.

8—Sanskrit literature. Lectures on the literature of the Vedic period. 1 hour, first half-year. Professor JACKSON

9—Lectures on comparative Iranian grammar. 1 hour, second half-year. Professor JACKSON

10—Zoroaster and Buddha and their teaching. Lectures. 1 hour. Professor JACKSON

Not given in 1897–98

11—Modern Persian, introductory course. First half-year: Grammar and reading. Salemann and Shukovski's *Persische Grammatik*. Second half-year: Interpretation of Sa'di's *Gulistan*. 2 hours. Mr. YOHANNAN

12—Modern Persian. Second-year course. 2 hours. Mr. YOHANNAN

Course in Armenian

1—Principles of the grammar, with selected readings. 1 hour, second half-year. Mr. YOHANNAN

Lectures

A course of afternoon lectures on the literature, antiquities, and religion of ancient India and Persia, open to all students of the University and to auditors, was given during the winters of 1895–96 and 1896–97. It is intended that this course of general lectures shall be offered each alternate year thereafter.

Course in the Study of Language

Introduction to the study of language. 2 hours. Professors W. H. CARPENTER and GOTTHEIL

Not given in 1897–98. Open to all university students.

Equipment

The Columbia University library (240,000 volumes) contains most of the important periodicals which deal with Oriental research, among them the *Zeitschrift der Deutschen Morgenländischen Gesellschaft*, *Journal of the Royal Asiatic Society*, *Journal Asiatique*, *Journal of the American Oriental Society*, *American Journal of Philology*, *Transactions of the American Philological Association*, *Wiener Zeitschrift für die Kunde des Morgenlandes*, *Indische Studien*, *Zeitschrift für Keilschriftforschung*, *Zeitschrift für Assyriologie*, *Revue Sémitique*, *Proceedings of the Society of Biblical Archæology*, *Beiträge zur Assyriologie*, *Zeitschrift für Ægyptische Sprache*, *Revue d'Histoire des Religions*, *Revue des Études Juives*, *Orientalische Bibliographie*, *Hebraica*, a complete set of the publications of the various Congresses of Orientalists, *Jewish Quarterly Review*, *Revue d'Assyriologie*; of periodicals of wider range which contain matter of interest to Orientalists, *Zeitschrift für vergleichende Sprachforschung*, Bezzenberger's *Beiträge zur Kunde der Indogermanischen Sprachen*,

Göttingische Gelehrte Anzeiger Indogermanische Forschungen ; and many weekly periodicals, such as *The Academy*, *Literarisches Centralblatt*, *Philologische Rundschau*, *Revue Critique*. The library has quite a rich collection of the publications of the learned societies of Europe—*e. g.*, of the Academies of Berlin, Vienna, Leipzig, St. Petersburg, Brussels, Paris, and Rome (Lincei).

The books relating to East Indian and Iranian subjects in the University library comprise already a good collection of the most important text-editions and works of reference, and additions are constantly being made. In Semitic philology, most of the best works will be found in the library ; care has been taken, especially in Assyriology, to buy all the more important publications. In the Avery Architectural Library, most of the monumental works relating to Eastern art and archæology will be found. Through the generosity of the trustees of Temple Emanuel, the library now possesses the most complete collection of works in Rabbinical Hebrew to be found in this country. There is also a small collection of Hebrew and Arabic MSS., designed for the use of advanced students. The collections of the University library are supplemented in the most valuable way in all branches of Orientalia by those of the Astor library, where the privileges of an alcove-reader may be secured by the advanced student. A collection of old Babylonian tablets has been added to the department. These, together with the casts of tablets in the Metropolitan Museum of Art, furnish material for those who wish to devote themselves especially to the study of Babylonian and Assyrian.

The library of the Union Theological Seminary, which is accessible to advanced students at Columbia University, contains all the current theological periodicals—*e.g.*, Stade's *Zeitschrift für Alttestamentliche Wissenschaft*, *Theologische Litteratur-Zeitung*, *The Expositor*.

Orthopædic Surgery

VIRGIL P. GIBNEY, M.D.....*Professor*
ROYAL WHITMAN, M.D.....*Chief of Clinic and Instructor in Orthopædic Surgery*
HOMER GIBNEY, M.D.....*Clinical Assistant*
LEONARD W. ELY, M.D.....*Clinical Assistant*

Courses

1—Clinic in orthopædic surgery and diseases of joints at the Vanderbilt Clinic. 1 hour per week. F. at 12. Professor GIBNEY

Required, in the fourth year, of candidates for the degree of M.D.

2—Practical instruction at the Vanderbilt Clinic to classes of 20 members each. 12 lessons. Dr. WHITMAN

Required, in the fourth year, of candidates for the degree of M.D.

3—Operations at the Hospital for Ruptured and Crippled. Tu., 8.30 A.M. Professor GIBNEY

Optional, in the fourth year, for candidates for the degree of M.D.

Otology

ALBERT H. BUCK, M.D.....*Clinical Professor*
WILLIAM COWEN, M.D.....*Instructor and Chief of Clinic*
ROBERT LEWIS, JR., M.D.....*Instructor*
ALLAN G. TERRELL, M.D.....*Clinical Assistant*
WALTER E. LAMBERT, M.D.....*Clinical Assistant*
M. L. CARR, M.D.....*Clinical Assistant*

Courses

1—Practical instruction in the diagnosis of the diseases of the ear, at the Vanderbilt Clinic—8 lessons for each student. Drs. COWEN and LEWIS

This instruction is given to the students in sections of ten men each, Mondays and Fridays at 2 P.M.

2—Diadactic instruction in pathology and therapeutic methods at the Vanderbilt Clinic—4 lectures for each student. Professor BUCK

This instruction is given to the students in sections of twenty men each, on Wednesdays at 2 P.M.

Pathology

(*Including Pathology, Normal Histology, Bacteriology, Clinical Microscopy, and Photomicrography.*)

T. MITCHELL PRUDDEN, M.D.....*Professor of Pathology and Director of the Associated Laboratories*
GEORGE C. FREEBORN, M.D.....*Instructor in Normal Histology*
TIMOTHY MATLOCK CHEESMAN, M.D.....*Instructor in Bacteriology*
IRA VAN GIESON, M.D.....*Instructor in the Normal Histology and Pathology of the Nervous System*
EUGENE HODENPYL, M.D.....*Instructor in Pathology*
JAMES EWING, M.D.....*Instructor in Clinical Microscopy and Alonzo Clark Scholar*
JOHN H. LARKIN, M.D.....*Assistant in Pathology and Curator of the Museum of Pathology*
EDWARD LEAMING, M.D.....*Instructor in Photography*
FREDERICK RANDOLPH BAILEY, M.D.....*Assistant in Pathology and Normal Histology*
OLIVER S. STRONG, Ph.D.....*Assistant in Normal Histology*
WILLIAM R. WILLIAMS, M.D.....*Assistant in Normal Histology*
FREDERIC H. FLOY, M.D.....*Assistant in Normal Histology*
FREDERICK S. WARD, M.D.....*Assistant in Normal Histology*
JOHN S. THACHER, M.D.....*Demonstrator of Pathology*
PHILIP HANSON HISS, JR., Ph.D., M.D.....*Assistant in Bacteriology*
WILLIAM F. NEUMANN, M.D.....*Assistant in Bacteriology*
CHARLES NORRIS, M.D.....*Tutor in Pathology and Alumni Association Fellow in Pathology*
FRANCIS C. WOOD, M.D.....*Assistant in Clinical Microscopy*
GEORGE P. BIGGS, M.D.....*Demonstrator of Pathology*

For convenience of administration, and for the better association of allied themes, the laboratories of Pathology, Normal Histology, Bacteriology, Clinical Microscopy, and Photomicrography are grouped together in the department of Pathology under the direction of the professor of Pathology.

Courses in Pathology

1—Autopsy technique and pathological anatomy—Systematic instruction in the making of autopsies, with the demonstration of lesions, is given in turn to small sections of the second-year class in preparation for the more extended study of pathology in the third year, either at the college or at the Roosevelt, Presbyterian, New York, or Bellevue Hospitals. Once a week for 8 weeks. Drs. HODENPYL, THACHER, NORRIS, and BIGGS

Required, in the second year, of candidates for the degree of M.D.

2—Practical instruction in general pathology, pathological anatomy and histology, and in the bacteriology of the infectious diseases, is given in the east laboratory on the top floor of the north wing of the Medical School. Each student is given about one hundred sections or other permanent preparations, illustrating the more important and common lesions. These he mounts for the microscope and studies, making notes and sketches. This collection of specimens he retains for future reference.

The systematic course opens with a study of the various phases of degeneration, and inflammation; tumors are next studied; then the acute infectious diseases, their lesions and their relationship to micro-organisms. The remainder of the course is devoted to the systematic study of the lesions of the viscera. Each student is furnished with a microscope and the necessary instruments and reagents. Delafield and Prudden's *Handbook of Pathological Anatomy and Histology* is used in this course. 6 hours a week for one half of the academic year. Professor PRUDDEN and Drs. HODENPYL, VAN GIESON, NORRIS, LARKIN, and BAILEY

Required, in the third year, of candidates for the degree of M.D.

3—Demonstrations in pathological anatomy. A demonstration is made twice a week to the class in pathology, in sections, of the material which may be newly gathered and from the permanent collection for the illustration of special themes. Drs. HODENPYL and LARKIN

Required, in the third year, of candidates for the degree of M.D.

4—Pathological anatomy and histology, experimental pathology, bacteriology as applied to medicine, and clinical microscopy. A limited number of graduates in medicine, or other advanced workers, are admitted to the special laboratories for the pursuit of advanced lines of study in these themes. Professor PRUDDEN, Drs. CHEESMAN, FREEBORN, HODENPYL, VAN GIESON, EWING, and NORRIS

Courses in Normal Histology

1—Practical instruction in general normal histology is given in the east laboratory on the upper floor of the north wing of the Medical School. Sections

and other preparations of the simple tissues and the more important thoracic and abdominal viscera of the normal body are given to each student during the course. These he is required to mount and study under the microscope, making notes and drawings of the entire series of specimens. This collection he retains for future reference. Each student is supplied with a microscope and with a tray of instruments and reagents. Stöhr's *Text-Book of Normal Histology* is used in this course. 6 hours a week for one half of the academic year. Drs. FREEBORN, BAILEY, WILLIAMS, WARD, and FLOY

Required, in the first year, of candidates for the degree of M.D. Elective for seniors in Columbia College.

2—Practical instruction similar in character and method to that under 1, but embracing as special themes the central nervous system, the skin, and the organs of special sense. 4 hours a week for one half of the academic year. Drs. VAN GIESON, FREEBORN, BAILEY, STRONG, WILLIAMS, WARD, and FLOY

Required, in the second year, of candidates for the degree of M.D.

3—Practical instruction in microscopic technology is given to a limited number of graduates in medicine, or other qualified workers, in the special laboratories on the fourth floor of the north wing of the college building. Dr. FREEBORN

Courses in Bacteriology

1—Practical instruction in bacteriology is given in the west laboratory on the fifth floor of the north wing of the College building. This course opens with the study of the relationship of bacteria to other micro-organisms. It embraces the methods of staining, examining, and cultivating. The student is taught by practical exercises the methods of separating one species of bacteria from another, and the series of biological characters used in identification of the various forms. The general relationship of certain micro-organisms to disease is considered and illustrated. Finally some of the hygienic aspects of bacteriology are studied by experiments in the sterilization of infectious materials, disinfection of the hands, and by practice in biological air, water, milk, and soil analysis. 6 hours a week for one quarter of the academic year. Drs. CHEESMAN, HISS, and NEUMANN

Required, in the second year, of candidates for the degree of M.D.

2—Special laboratory course—There is an opportunity each year for a few graduates in medicine, or other qualified workers, to receive a special course in practical bacteriology. The laboratory is abundantly supplied with apparatus for the culture and study of micro-organisms, and has under cultivation a large collection of identified species. In this course the applications of bacteriology to sanitation and to practical medicine are held in view.

Methods of preparation, staining, microscopic study, and measurement of bacteria. Preparation of culture media ; study and record of observation of selected typical species ; systematic analyses for determination of unknown species ; methods of isolation of species ; qualitative and quantitative biological examinations of water, soil, and air ; methods of determining pathogenic properties, disinfection, modes of testing value of germicides.

Text-books: Abbott's *Principles of Bacteriology*, 2d edition; Sternberg's *Bacteriology*.

This course requires attendance at the laboratory during the entire afternoon in January, February, and March. Drs. CHEESMAN and HISS

Minor for the degree of A.M. or of Ph.D.

3—Laboratory course—As under Course 2, with additional study and determination of known species of bacteria; special study of the chemical products formed in the growth of bacteria, practical work in photomicrography, and the pursuit of some selected theme for original investigation. Professor PRUDDEN, and Drs. CHEESMAN and LEAMING

Major for the degree of A.M. or of Ph.D.

Courses in Clinical Microscopy

1—Practical instruction in clinical microscopy is given in the west laboratory on the fifth floor of the north wing of the College building. This course embraces the practical study of blood, urine, sputum, stomach contents, fæces, and milk, and instruction in such methods of clinical diagnosis as involve the usual microscopical, bacterial, and chemical analyses. 6 hours a week for one quarter of the academic year. Drs. EWING, NORRIS, and WOOD

Required, in the fourth year, of candidates for the degree of M.D.

2—Special laboratory course in clinical microscopy—Opportunity is offered each year to a limited number of qualified workers for advanced study on selected themes in the special laboratory for clinical microscopy. Drs. EWING and NORRIS

Photography

Practical instruction is given to a limited number of men in the photographic laboratories of the college, in the technique of photography and photomicrography for scientific purposes.

The time necessary for the acquirement of this technique varies with the facility of the student and the hours devoted to the theme, and is subject to special arrangement.

The facilities of these laboratories may be drawn upon for purposes of record and illustration by instructors in various departments of the college and by others. Dr. LEAMING

Research

Research in Pathology and Bacteriology may be pursued in the laboratories of this department by a limited number of graduate students or practitioners of medicine, or other advanced workers under the direction of the professor. To such men the large collection of pathological specimens preserved for microscopical study and the collection of bacterial cultures belonging to this department are accessible. Professor PRUDDEN

Fellowships

For the fellowships open to persons wishing to do special work under the professor of Pathology, see page 27

Museum

The Museum of Pathology is made use of in the work of this department; both for the instruction of medical students, and as a place of deposit for specimens showing new or rare forms of lesions.

Equipment

The department of Pathology occupied in the autumn of 1895 the large additional space which the new College buildings furnish. The large classroom on the upper floor of the north wing is used as formerly for the class in normal histology and in pathology. The fourth floor is devoted to the pathological museum and to a large preparation laboratory, a workshop, cold-storage, and the like. The new space is devoted to a general laboratory and to private rooms for instructors and advanced workers in pathology, to undergraduate and to research work in bacteriology and clinical microscopy, and to a departmental library.

This new space is amply lighted, fully furnished and equipped with such new apparatus as the rapidly growing sciences of pathology, bacteriology, and their closely allied themes require.

Philosophy, Psychology, and Education

NICHOLAS MURRAY BUTLER, Ph.D. ..... *Professor*
JAMES MCKEEN CATTELL, Ph.D. ..... *Professor*
JAMES HERVEY HYSLOP, Ph.D. ..... *Professor*
LIVINGSTON FARRAND, A.M., M.D. ..... *Instructor*
NORMAN WILDE, Ph.D. ..... *Assistant*
CHARLES AUGUSTUS STRONG, A.B. ..... *Lecturer*
FRANZ BOAZ, Ph.D. ..... *Lecturer*
JOHN ANGUS MACVANNEL, Ph.D. ..... *Assistant*
SHEPHERD IVORY FRANZ, A.B. ..... *Assistant*
JOHN FRANCIS WOODHULL, A.B. ..... *Professor in Teachers College*
FRANK THOMAS BAKER, A.M. ..... *Professor in Teachers College*
JAMES EDWARD RUSSELL, Ph.D. ..... *Professor in Teachers College*
EUGENE HOWARD CASTLE, A.M. ..... *Professor in Teachers College*

The courses of this division (comprising the department of Philosophy and Education, and the department of Psychology) fall into four groups, those on Philosophy, those on Psychology, those on Anthropology, and those on Education. In each group are courses intended primarily for undergraduates. These are best described as introductory courses, and their aim is to furnish a general acquaintance with the main subdivisions of Philosophy, Psychology, and Education as a whole. The courses known as Philosophy A, 1, and 2, Psychology 1, 2, and 8, Anthropology 1, and Education 1 and 2, are of this character. By the use of the historical and comparative methods of study and exposition, students in these courses are introduced to a general survey of their respective subjects. While serving as introductory courses for students proposing to specialize in philosophy, psychology, anthropology, or education, these courses

are particularly recommended to those students of law, medicine, political science, natural science, or theology, who wish to acquire some knowledge of philosophy, psychology, anthropology, and education as part of a liberal education, or as supplemental to their own special lines of study.

The remaining courses in each group are intended primarily for advanced students. These courses may be taken only by those who have had the introductory courses, or their equivalent at some other university. The advanced courses are planned with reference to each other, and a student remaining three years in the division may pursue courses that cover the entire range of modern philosophy, psychology, and education.

Seniors in Columbia College and in Barnard College may elect Education **5, 6, 8, 9, 10,** and **11,** given at Teachers College, and count the same as part of the work required for the degree of bachelor of arts.

A select number of advanced students, usually candidates for university degrees, are admitted to the seminars organized for training in research.

All of the courses offered by this division, except Philosophy **A**, Psychology **7,** and Anthropology **1** and **2,** are open to women on the same terms as to men. Women wishing to enter any of the courses as candidates for a degree or as special students, must register through Barnard College.

All of the courses, except Philosophy **A,** Psychology **7,** Anthropology **1** and **2,** and the several seminars, are open to auditors on the usual terms.

Courses in Philosophy

A—Psychology and logic—Hyslop's *Syllabus for Psychology*, James's *Principles of Psychology*, Hyslop's *Elements of Logic*—Lectures, practical exercises, and recitations. 3 hours, first half-year. Professor HYSLOP and Dr. MACVANNEL

This course is required of all members of the junior class in Columbia College, and must be taken by all university students who desire to enter the advanced courses, unless they have had an equivalent course elsewhere.

1—Historical introduction to philosophy—Weber's *History of Philosophy;* Windelband's *History of Philosophy*—Lectures, essays, and private reading. 2 (or 3) hours. Professor BUTLER and Dr. WILDE

This course serves as a general introduction to the study of philosophy, and is prerequisite to Courses 3 and 4.

The third hour in this course (F. at 2.30) is devoted to recitation and discussion. It is not taken by those students who count Philosophy 1 as a two-hour course. The third hour must be taken by all candidates for final honors in Philosophy, as well as by university students offering this course as part of the requirement for a higher degree.

2—Ethics, introductory course—Lectures, essays, and discussions. 2 hours. Professor HYSLOP and Dr. WILDE

This course is pre-requisite to Courses 5 and 6.

3—The philosophy of Kant and his successors; Fichte, Schelling, Hegel, Herbart, and Schopenhauer—Lectures, essays, and private reading. 2 hours. Professor BUTLER and Dr. MACVANNEL

Given in 1897–98 and each alternate year thereafter.

Course 3 is open only to students who have had Courses A and 1 or their equivalent.

4—British philosophy from Locke to Herbert Spencer; history and criticism of the association psychology and the philosophy of evolution—Locke's *Essay on the Human Understanding*, Berkeley's *Principles of Human Knowledge*, Hume's *Treatise of Human Nature;* the writings of Hartley, Brown, the Mills, and Bain; Herbert Spencer's *First Principles*—Lectures, essays, and private reading. 2 hours. Professor BUTLER and Dr. MACVANNEL

Given in 1898–99 and each alternate year thereafter.

Course 4 is open only to students who have had Courses A and 1 or their equivalent.

5—Practical ethics—Lectures, private reading, observation, essays, and discussions. 2 hours. Professor HYSLOP

Given in 1897–98 and each alternate year thereafter.

Course 5 is open only to students who have taken Courses A and 2 or their equivalent.

6—Systematic ethics—Lectures, discussions, and essays. 2 hours. Professor HYSLOP

Given in 1898–99 and each alternate year thereafter.

Course 6 is open only to students who have taken Courses A and 2 or their equivalent.

7—History of English ethics—Lectures, essays, and discussions. 2 hours, first half-year. Dr. WILDE

8—History and principles of æsthetics—Lectures and discussions. 2 hours, second half-year. Dr. WILDE

9—Applied logic and scientific method. 3 hours, second half-year. Professor HYSLOP and Dr. MACVANNEL

10—Journal Club—Reports and discussions on contemporary literature—1 hour. Dr. WILDE

Seminars

Ethical seminar—Professor HYSLOP. One session weekly.

Philosophical seminar—Professor BUTLER. Two sessions each month.

Courses in Psychology

1—Introduction to psychology—Lectures and demonstrations. 2 hours. Professors BUTLER, CATTELL, STARR, and HYSLOP, Drs. FARRAND, BOAS, and WILDE, and Mr. STRONG

The object of this course is to give a summary view of the subject-matter and methods of modern psychology. The ground covered is as follows:

A. Prolegomena to psychology, including a sketch of the history of psychology. Six lectures. Professor BUTLER

B. Representative modern psychologists. Seven lectures. Dr. WILDE

C. Physiological psychology. Eight lectures. Dr. FARRAND

D. Experimental psychology. Eight lectures. Professor CATTELL

E. Comparative psychology. Eight lectures. Dr. BOAS

F. Pathological psychology. Three lectures. Dr. STARR

G. General psychology. Eight lectures. Professor HYSLOP

H. Philosophical psychology. Six lectures. Mr. STRONG

2—Experimental psychology, introductory course—Lectures, themes, and laboratory work. 2 hours. Professor CATTELL and Mr. FRANZ

This course is planned for seniors in the College and others having an equivalent training. It is introductory to the more advanced courses in experimental psychology, and is intended to give such knowledge of modern psychological methods and results as should be included in a liberal education.

3—Experimental psychology—Laboratory work. 2 or 4 hours counting as a 1- or 2-hour course. Professor CATTELL and Mr. FRANZ

This course is intended to give students attending Course 2 additional opportunities for laboratory work.

4—Mental measurement—Lectures, laboratory work, and reports. 2 hours. Professor CATTELL

The subject of this course is proposed for 1897–98 only, the course being altered each year, so that candidates for the higher degrees may be able to investigate different subjects.

5—Research work in experimental psychology. Daily. Professor CATTELL and Mr. FRANZ

6—General psychology, advanced course—Lectures, discussions, and private reading. 2 hours. Mr. STRONG

7—Diseases of the mind and nervous system—Lectures and demonstrations. 1 hour. Professor STARR

8—Physiological psychology, general course—Lectures, demonstrations, and laboratory work. 3 hours. Dr. FARRAND

9—Abnormal and pathological psychology—Lectures and discussions. 1 hour, second half-year. Dr. FARRAND

Courses in Anthropology

1—Anthropology, general introductory course—Lectures, essays, and discussions. 2 hours. Dr. FARRAND

The second half of this course is given by Dr. RIPLEY of the Faculty of Political Science.

2—Anthropology, primitive culture—Lectures, papers, and discussions. 2 hours. Dr. FARRAND

Other courses in Anthropology are given by Dr. Boas as follows:

Anthropology 3—Physical anthropology. General introductory course. 2 hours.

Anthropology 4—Physical anthropology. Advanced course. 3 hours.

Anthropology 5—North American languages. 2 hours.

See Anthropology, page 37

Courses in Education

1—History of educational theories and institutions: Aristotle and the ancient educational ideals, Alcuin and the rise of the Christian schools, Abelard and the foundation of the universities, Loyola and the educational system of the Jesuits; the educational reformers, Rousseau, Pestalozzi, and Froebel; Herbart and modern theories of education—Conferences, occasional lectures, essays, and private reading. 1 hour. Professor BUTLER

2—Principles of education: psychology of childhood didactics—Conferences, occasional lectures, essays, and private reading. 2 hours. Professor BUTLER

[The second hour of this course is to be devoted to observation and practice teaching, under supervision, at Teachers College.]

Seminar

Educational seminar—weekly sessions. Professor BUTLER

The following courses are given at Teachers College, 120th Street, West, between Amsterdam Avenue and the Boulevard:

4—Seminar—Subject for 1897–98: Theoretical and practical problems arising out of the co-ordination and relative value of studies. Professor RUSSELL and the FACULTY OF TEACHERS COLLEGE

5—Elements of psychology and general method. 4 hours, including observation. Professor RUSSELL
Second half-year.

6—Advanced psychology and general method. 2 hours. Professor RUSSELL

7—English literature in elementary and secondary schools. 2 hours. Professor BAKER
First half-year.

8—English composition in elementary and secondary schools. 2 hours. Professor BAKER
Second half-year.

9—The teaching of history in secondary schools. 1½ hours. Professor CASTLE
An additional hour for observation to be arranged.
First half-year.

10—Methods of teaching Latin and Greek in secondary schools. 1½ hours.
An additional hour for observation to be arranged.
Second half-year.

11—Methods of teaching mathematics in secondary schools. 1½ hours.
An additional hour for observation to be arranged.
Second half-year.

12—The teaching of science in elementary and secondary schools. 1 hour. Professor WOODHULL

13—Methods of teaching manual training in elementary and secondary schools—Lectures, essays, reports, and private reading. 2 hours (or, if accompanied with practice, 4 to 6 hours)

14—Institutes of education—Laurie's *Institutes of Education*, Rosenkranz's *Philosophy of Education*, Herbart's *Science of Education*, Rein's *Outlines of Pedagogics*—Lectures, essays, and private reading. 1 hour.
First half-year. Not given in 1897–98.

15—School supervision and school management. 3 hours.

Equipment

The equipment of the division is very complete and constantly being increased. It includes library facilities, laboratories of experimental and physiological psychology, a school of observation and practice, and the beginnings of an educational museum.

LIBRARY FACILITIES—The library facilities of Columbia University and of the city of New York, for students of philosophy, psychology, anthropology, and education, are unusually good. Any book needed by an advanced student can usually be bought at once. The collection of books on the history of philosophy is very large, that on Kant and his philosophy being especially complete. Over 800 periodicals are regularly received at the University library, and among them will be found every journal of importance, American or foreign, dealing with philosophy, psychology, ethics, or education. Duplicates of the more important books and journals are placed in the psychological laboratory and may be used by students at their convenience. Students of psychology will also find much of value in the library of the Academy of Medicine, 15 West 43d Street, which is open to students free of charge. Students of anthropology may avail themselves of the extensive collections of the American Museum of Natural History. The Astor and Lenox libraries are also available for students, when introduced by one of the instructors, on especially favorable terms.

Students of education have also at their disposal the Bryson Library at the Teachers College, 120th Street, West. This collection now numbers more than 7500 volumes, and is constantly being enlarged. The main purpose of the library is to afford to special students of education opportunities for study and research.

THE PSYCHOLOGICAL LABORATORY—The new laboratory occupies the eastern half of the second floor of Schermerhorn Hall. The part occupied by the psychological laboratory was planned for this purpose after a careful study of psychological, physical, and physiological laboratories. It includes a large lecture room fitted up for lectures, demonstrations, and experimental work by students in the general courses, a seminar room, with a department library, and eight other rooms. These include a room for work in anthropology and physiological psychology, a room for a workshop and for preparations, an apparatus cabinet, and five research laboratories. Two of these are dark rooms, specially constructed to exclude all sound as well as light, 20 feet high and well ventilated. The laboratory has light from the north and south, is supplied in all rooms with electric current of both high and low potential, and is in all respects equipped both for instruction and research.

The collection of apparatus includes: (1) Outfit for making and repairing apparatus, measuring instruments, and electric motors; (2) the outfit of an anthropometric laboratory with which freshmen in the College and others are annually tested; (3) the apparatus, preparations, and charts needed for complete courses in experimental and physiological psychology; and (4) the apparatus that has been used or is being used in special researches. A large part of the apparatus has been made especially for the laboratory.

The collections and apparatus in the departments of Zoölogy, Physics, and Physiology, as also of the American Museum of Natural History, are unusually complete and may be used by students of psychology and anthropology.

HORACE MANN SCHOOL—For students of education there is afforded an exceptional opportunity for observation and practice in teaching. This is given in the school of observation and practice known as the Horace Mann School, which is maintained by Teachers College for this purpose. In this school

every phase of school work, including the high school as well as the kindergarten and elementary school, is to be found in operation. In all these grades there are being worked out, from year to year, in the light of educational theory and of practical experience, the typical educational problems of the day. Opportunities for practice in teaching and supervision are afforded to qualified students.

Physics

OGDEN N. ROOD, A.M. ..... *Professor*
WILLIAM HALLOCK, Ph.D. ..... *Adjunct Professor*
REGINALD GORDON, A.B. ..... *Instructor*
HERSCHEL C. PARKER, Ph.B. ..... *Tutor*
CHARLES C. TROWBRIDGE, B.S. ..... *Tutor*
HENRY S. CURTIS, A.B. ..... *Assistant*
HERBERT T. WADE, A.B. ..... *Assistant*
HENRY E. KEYES, Ph.D. ..... *Assistant*
THEODORE G. WHITE, Ph.B., A.M. ..... *Assistant*
DANA C. WELLS, A.B., E.E. ..... *Assistant*
FRANK L. TUFTS, Ph.D. ..... *Assistant*
WILLIAM S. DAY, Ph.D. ..... *Assistant*

Courses

1—General physics. Sound and heat (first half-year). Light and electricity (second half-year). Lectures and recitations 3 hours, laboratory 2 hours. Professor ROOD and Mr. GORDON

Laboratory work not required of first-year students in courses under the Faculty of Applied Science, with the exception of those in the course of Mechanical Engineering. Open to students in the College.

2—Sound (first half-year). Magnetism and electricity (second half-year). 2 hours lectures, 2 or 6 hours laboratory work. Text-books: Atkinson's Ganot, and Stewart and Gee's *Physics*. Professor ROOD

Open to candidates for the degree of A.M. whose minor subject is Physics.

3—Units and measurements (first half-year). Lectures on the absolute system of mechanical and electrical units; electrical measurements; the derivation and use of the Watt, Joule, Ampère, Volt, and Ohm.

Exact electrical measurements (second half-year). Lectures on the Farad, Coulomb, and units of electric and magnetic induction.

Electrical and magnetic measurements in the laboratory. 2 hours lectures, 2 to 8 hours laboratory. Text-books: Everett's *C. G. S. System of Units*, Glazebrook and Shaw's *Physics*, Kohlrausch's *Physical Measurements*, Wiedemann and Eberts' *Physics*, and A. Witz's *Physics*. Professor HALLOCK

Required of second-year students in the Electrical Engineering course. Second-year students in all courses under the Faculty of Applied Science, except that of Architecture, are required to attend the lectures of the first half-year, and to take two hours of laboratory work during the whole year. Open to candidates for the degree of A.M. whose minor subject is Physics. Pre-requisite: Course 1 or 2 with two hours laboratory work.

4—Light (first half-year). Lectures on the velocity, reflection, refraction, and dispersion of light. Achromatism, optical instruments, the eye, and Young's theory of color. Physical measurements in the laboratory.

Heat (second half-year). Lectures on the expansion of solids, liquids, and gases; on conduction, specific heat, tension of vapors, and radiant heat. Physical measurements in the laboratory. 3 hours lectures, 2 or 4 hours laboratory work. Text-books: Stewart and Gee, and Glazebrook and Shaw's *Physics*. Professor ROOD

Open to candidates for the degree of A.M. whose minor subject is Physics. Pre-requisite or parallel: Course 2.

5—Modes of designing and constructing apparatus (first half-year). 1 hour. Professor HALLOCK

Open to second-year students under the Faculty of Applied Science, and to university students. Pre-requisite or parallel: Course 2, 3, or 4.

6—Elementary meteorology (first half-year). The steam-engine (second half-year). 1 hour. Mr. GORDON

Pre-requisite or parallel: Course 2 or 4.

7—Electrical manipulation (first half-year). 1 hour. Theoretical comparison of electrical methods (second half-year). 2 hours. Mr. PARKER

Open to candidates for the degree of Electrical Engineer, and to university students. Pre-requisite or parallel: Course 3 or 4.

8—Undulatory theory of light (second half-year). 2 hours. Professor HALLOCK

Open to university students. Pre-requisite or parallel: Course 4 of seven hours.

Courses 2 to 13 are open to properly qualified students in the College.

31—General physics (shorter course for students in medicine). 3 hours lectures and 3 hours laboratory work, for a half-year. Professor HALLOCK

This course is delivered twice every year, and is required of candidates for the degree of M.D. in their first year.

Laboratory Courses

9—Electromotive force of standard and constant cells

10—Study of strength of electric currents

11—Study of elasticity of solid bodies

12—Colorimetry, and absorption spectra

13—Photometry

Open, with five hours laboratory work, to candidates for the degree of A.M., or, with eight hours laboratory work, to candidates for the degree of Ph.D., whose minor subject is Physics. Pre-requisite: Course 2 of eight hours.

14—Calibration of Wheatstone bridges

15—Hypsometry

16—Determination of index of refraction by special methods

17—Quantitative examination of the discharge of the induction coil

18—Viscosity of solids

Open to candidates for the degree of A.M., or, with ten hours laboratory work, to candidates for the degree of Ph.D., in their first year, whose major subject is Physics. Pre-requisite: Courses 2 and 4 of eight and seven hours.

19—Galvanometer construction for maximum efficiency
20—Advanced course in spectrometry
21—Ballistic-galvanometer work, inductance
22—Calorimetry
23—Radiant heat
24—Interference of light
25—Polarized light
26—Acoustic measurements
27—Thermo-electricity
28—Measurement of low resistance
29—Electrical insulation
30—The use of the microscope

Professors ROOD and HALLOCK, Mr. GORDON, and Mr. PARKER

Open, with ten hours laboratory work, to candidates for the degree of Ph.D., in their first year, whose major subject is Physics. Pre-requisite: Courses 2 and 4 of eight and seven hours.

Original research, conducted under the direction of Professors Rood and Hallock, is open to properly qualified persons, including candidates for the degree of Ph.D., in their last year, whose major subject is Physics.

Equipment

The laboratories and lecture rooms of the department of Physics occupy four floors of the Physics Building on the eastern side of the University grounds. The building is supplied with all ordinary conveniences, including electricity for power and light, compressed air, and steam. There is a vertical shaft 95 feet high, with gas, electric, and water outlets at every ten feet. In the sub-basement a constant-temperature room is placed twelve feet below the surface of the ground. A platform on the roof of the building is available for meteorological observations, an instrument room being located directly below. There are two lecture rooms, a library, an apparatus room, and a small laboratory on the first floor, while the remainder of the space devoted to the department is occupied by laboratories of different kinds.

The general elementary laboratory includes in its equipment: three linear and three circular dividing engines of different design; a Geneva Society comparator, and dividing engine; a Grunow cathetometer, spherometers, optical levers, calipers, and micrometers of many kinds, eight balances with weights, specific-gravity apparatus, hydrometers, areometers, Becker and Jolly balances, and the various forms of vapor-density apparatus; standard mercurial barometers, aneroid and Mariotti barometers, Kater's and Borda's pendulums, and apparatus for studying elasticity are provided; also a monochord, Quincke's apparatus, Kundt's dust-figure apparatus, and sets of organ pipes and tuning-forks for the study of sound; thermometers and apparatus for their calibration, and zero and boiling points are supplied; also there is apparatus for determination of co-efficients of expansion, for latent and specific heat, and calorimetry.

The optical rooms are furnished with eight spectrometers of different designs, five spectroscopes, small telescopes, opera-glasses, microscopes, sets of lenses,

prisms, and gratings, goniometer, a sextant, optical benches, photometers, saccharimeters, total reflectometers, and apparatus for colorimetry, polarized light, and spectroscopy.

In the rooms devoted to electricity are nine galvanometers of various patterns, high and low resistance, ballistic and dampened; electrometers, magnetometers, rheostats and bridges of all types; condensers, batteries, keys, arc and incandescent lamps, ammeters and volt-meters, and four standard ohms.

The workshop is furnished with a lathe, planer, grinding head, vises, carpenters' and machinists' benches, and tools for work in metal, wood, and glass.

Advanced students are taught and encouraged to repair, alter, and construct apparatus needed for their special work.

Physiology

JOHN GREEN CURTIS, M.D. ..... *Professor*
FREDERIC SCHILLER LEE, Ph.D. ..... *Adjunct Professor and Demonstrator*
RICHARD HOOP CUNNINGHAM, M.D. ... *Demonstrator and Alumni Association Fellow*
REID HUNT, Ph.D., M.D. ..... *Tutor*

Courses

1—General physiology. Structure of protoplasm; physiology of the cell; physiological division of labor and evolution of special functions; irritability; contractility; phototaxis: geotaxis; chemotaxis; galvanotaxis; general principles of secretion; the nerve cell; the nerve impulse; reflex action; the germ cells. Lectures, 1 hour. Professor LEE

Open to qualified candidates for the degree of M.D.

Open as an elective to seniors who have had at least one year of general biology, and, in conjunction with Course 3, to such seniors and to qualified candidates for the degree of A.M. or of Ph.D.

2—The physiology of man as related to that of other mammals and of lower vertebrates. This course treats in alternate years of (*a*) the physiology of nutrition and (*b*) the physiology of the muscular and nervous systems and the special senses. Certain introductory lectures are repeated annually. Lectures and demonstrations, 4 to 6 hours. Professors CURTIS and LEE and Drs. CUNNINGHAM and HUNT

Required, in the first and second years, of candidates for the degree of M.D.

Open as an elective to seniors in Columbia College, and, in conjunction with Course 4, to qualified candidates for the degree of A.M. or of Ph.D.

3—Laboratory course in general physiology—5 hours. Professor LEE and Dr. HUNT

Open to qualified candidates for the degree of M.D., and, in conjunction with Course 1, to seniors who have had at least one year of general biology, and to qualified candidates for the degree of A.M. or of Ph.D.

4—Laboratory courses. Personal instruction, private reading, practical work, and research. Professors CURTIS and LEE and Drs. CUNNINGHAM and HUNT

Open to qualified candidates for the degrees of M.D., A.M., and Ph.D.

Research

5—The laboratory is open for research, under the direction of its officers, to advanced workers. Professors CURTIS and LEE and Drs. CUNNINGHAM and HUNT

Fellowships

For the Alumni Association Fellowships open to persons desiring to do special work in the department of Physiology, see page 27

For the University Fellowships, also open as above, see page 20

Marine Laboratory

An investigator's room at the Marine Biological Laboratory at Wood's Holl, Mass., has been provided by the University for the use of the department of Physiology.

This renders possible, during the summer, researches upon the physiology of the marine fauna.

Equipment

The department of Physiology possesses :

(1) A laboratory, for research and the preparing of demonstrations, covering 1769 square feet and lighted on three sides.

(2) A small laboratory for histological research with special reference to physiological problems.

(3) Two rooms for optical or psychological work or for photography, communicating with the main research laboratory and with one another. One of these has a free southerly exposure for the heliostat.

(4) Two private laboratories for the professors of the department.

(5) A laboratory for practical instruction.

(6) A room for lectures and demonstrations to limited classes.

(7) Easy access to a large lecture room specially fitted for experimental teaching.

(8) The Swift Physiological Cabinet, for the accommodation of a specially endowed and very full collection of apparatus of precision, mainly for research.

The physiological journals in English, German, and French are accessible at the laboratory to advanced students ; also the most important monographs and other books both modern and ancient. Weekly meetings are held and reports are made by members of the department upon recent physiological literature.

A skilled mechanic is employed to devote his entire working time at the laboratory to the care and improvement of the plant, including the making, altering, and repairing of special apparatus. He also assists in the scientific manipulations. The following machines and apparatus deserve mention :

An upright seven-horse-power steam-engine, mounted against a pier upon an iron bracket to avoid floor vibrations, and working a shaft which runs the whole length of the main research laboratory; an electric motor and shafting in the laboratory for practical instruction ; two steam lathes ; apparatus worked by steam for artificial respiration ; Ludwig's "Schlagwähler" ; kymograph for a long roll of paper, and high-speed drum kymograph, both worked by steam ;

high-speed drum kymograph, worked by weights; two drum kymographs of the spring pattern; eight high-speed drum kymographs, worked by the electric motor; Hürthle's kymograph for a very long band of smoked paper; two single drums, to be revolved by hand; four "Basel stands" for the fine adjustment of recording levers; Zeiss scales and other instruments for reading and measuring curves, including a planimeter; electro-magnetic chronographs and control hammer; seconds pendulum; interrupter clock; Jaquet's recording chronometer; automatic dry-contact tuning-forks; short-beam quantitative balance; copper voltameter; milliampère- and ampère-meters; Wiedemann-duBois galvanometer, with coils of high and low resistance; Hauy's bar, telescope, and milk-glass scale; capillary electrometers; ohmmeter, for resistances of from 0.001 to 200,000 ohms; Edelmann's faradimeter; thirteen horizontal and two upright duBois induction coils; a complete collection of duBois-Reymond's other apparatus; moist chambers and muscle-levers; upright rheochord; mechanical tetanometer; differential rheotome; Marey's tambours, cardiographs, stethograph, and explorer of the human muscles; sphygmographs; plethysmograph; oncometers; three single and one double recording mercurial manometers; spring manometer of Fick; manometers of Hürthle; tonographs of von Frey; "stromuhr"; frog-heart apparatus; thermo-electric apparatus; constant-pressure injection apparatus; two mercurial gas pumps; large spectroscope; direct-vision spectroscope; Ladd spectroscope; four micro-spectroscopes; heliostat; sixteen microscopes and accessories; Thoma's microtome; Anschütz's "Schnellseher"; numerous instruments and models for the investigation and demonstration of the physiology of sight and hearing; casts and models of the brain; Dalton's apparatus for making sections of the human brain.

Political Economy and Finance

(See page 55)

Political Philosophy

(See page 86)

Portuguese and Rumanian

(See page 138)

Practice of Medicine

FRANCIS DELAFIELD, M.D., LL.D. ..... *Professor*
WILLIAM H. DRAPER, M.D. ..... *Professor of Clinical Medicine*
WALTER B. JAMES, M.D. ..... *Clinical Lecturer and Instructor in Hospital Diagnosis*
FRANK W. JACKSON, M.D. ..... *Chief of Clinic and Instructor in Hospital Diagnosis*
GEORGE ROE LOCKWOOD, M.D. ..... *Clinical Assistant and Instructor in Physical Diagnosis*
WILLIAM K. DRAPER, M.D. ..... *Clinical Assistant and Instructor in Physical Diagnosis*
VAN HORNE NORRIE, M.D. ..... *Clinical Assistant and Instructor in Physical Diagnosis*
JOHN W. BRANNAN, M.D. ..... *Instructor in Hospital Diagnosis*
ANGIER B. HOBBS, M.D. ..... *Clinical Assistant*
ARTHUR M. SHRADY, M.D. ..... *Clinical Assistant*
ALFRED E. SUMNER, M.D. ..... *Clinical Assistant*
ARTHUR R. BRAUNLICH, M.D. ..... *Clinical Assistant*

Courses

1—The practice of medicine. Didactic lectures, 2 hours for five months, and 3 hours for three months. Professor DELAFIELD

Required, in the third and fourth years, of candidates for the degree of M.D.

2—Clinical lectures on general medicine at the Vanderbilt Clinic. 1 hour. Th. at 3 P.M. Professor DELAFIELD

Required, in the third and fourth years, of candidates for the degree of M.D.

3—Physical diagnosis. Practical instruction; 30 lessons for each student. Drs. LOCKWOOD, DRAPER, and NORRIE

Required, in the third year, of candidates for the degree of M.D.

4—Hospital diagnosis. Practical instruction; 20 lessons for each student. Drs. JACKSON, JAMES, and BRANNAN

Required, in the fourth year, of candidates for the degree of M.D.

5—Hospital clinics in general medicine. Roosevelt Hospital. Monday at 4 P. M., throughout the academic year. Professors DELAFIELD, DRAPER, and PEABODY

New York Hospital. Saturdays at 9.30 A. M. and Mondays at 3 P.M. Professors DRAPER and PEABODY. (See "Materia Medica and Therapeutics.")

Presbyterian Hospital. Tuesdays at 3 P.M.

Attendance at hospital clinics is optional, in the third and fourth years, for candidates for the degree of M.D.

Provençal

(See page 137)

Psychology

(See page 122)

Public Law and Jurisprudence

(See page 91)

Rhetoric and English Composition

(See page 74)

Romance Languages and Literatures

ADOLPHE COHN, LL.B., A.M.....*Professor*
HENRY ALFRED TODD, Ph.D.....*Professor of Romance Philology*
CARLO LEONARDO SPERANZA, LL.B., A.M.....*Adjunct Professor*
BENJAMIN DURYEA WOODWARD, Ph.D.....*Instructor*
LOUIS AUGUSTE LOISEAUX, S.B.....*Tutor*
CURTIS HIDDEN PAGE, Ph.D.....*Tutor*

The department of the Romance Languages and Literatures has charge of all the courses of instruction and research throughout the University, dealing with the various languages that trace their origin to the speech of ancient Rome. To the chief of these languages, the French, Italian, and Spanish, a foremost place is naturally assigned in the work of the department; but special atten-

tion is also given, in the more advanced courses, to the remaining members of the family, several of which, such as Old and Modern Provençal, Catalan, Portuguese, Rhæto-Romance, and Rumanian, are possessed of noteworthy literary and philological interest.

The department offers : (1) to students in Columbia College, practical instruction in French, Italian, and Spanish, courses in French, Italian, and Spanish literature, and introductory instruction in Romance philology ; (2) to students in the School of Philosophy, advanced instruction in literature and in Romance philology, courses in the languages unprovided for in Columbia College, and also instruction of a pedagogical character ; (3) to university students at large, and also to auditors, an opportunity to follow special courses ; while advanced students in particular may receive the preparation necessary to meet the requirements in French made of every candidate for the degree of Ph.D. One of the aims of the department is to offer at least one course in each of the languages of the Romance group. Although no course in philology proper is offered to members of the lower classes in the College, it may be stated that from the outset care is taken to suggest the significance of the historical development of the language taught, so as to furnish a solid foundation for grammatical knowledge, and to awaken in some portion of the students a taste for philological research.

The courses at present offered are grouped under the following headings : French, Provençal, Italian, Spanish, Portuguese, Rumanian, Romance Philology.

Courses **9** and **10**, under French, are given by Professor BRANDER MATTHEWS of the department of Literature.

Courses in French

Elementary course for university students.

Books : Chardenal, *Complete French Course ;* Super, *French Reader ;* Labiche et Martin, *Le Voyage de M. Perrichon ;* Halévy, *L'Abbé Constantin ;* Sandeau, *Mademoiselle de la Seiglière ;* About, *La Mère de la Marquise ;* also, if time serve, Sand, *La Mare au Diable.*

3 hours, first half-year. Dr. PAGE

Intended for *advanced students* from any department of the University who have omitted to take French in the earlier part of their course. It is therefore expected that work can be pushed forward fast enough to enable them to join Course 1 at the beginning of the second half-year. No examination will be conducted in this course. Students preparing for the entrance examination in French will not be admitted.

A—Elementary course for freshmen.

Books : Chardenal, *Complete French Course ;* Edgren, *French Grammar ;* Grandgent, *French Composition ;* Daudet, *Choix de Contes ;* Halévy, *L'Abbé Constantin ;* Van Daell, *Introduction to French Authors ;* George Sand, *La Mare au Diable ;* Mérimée, *Colomba ;* Taine, *Les Origines de la France contemporaine* (Holt) ; About, *Les Mariages de Paris ;* Labiche et Martin, *Le Voyage de M. Perrichon ;* Sandeau, *Mlle. de la Seiglière ;* Augier et Sandeau, *Le Gendre de M. Poirier ;* Molière, *L'Avare, Le Bourgeois gentilhomme.*

5 hours. Mr. LOISEAUX, Dr. PAGE, and Dr. WOODWARD

Prescribed for freshmen who entered the College without presenting French.

1—Grammar, reading, composition.

Books: Edgren, *French Grammar;* Grandgent, *French Composition;* George Sand, *La Mare au Diable;* Mérimée, *Colomba;* Taine, *Les Origines de la France contemporaine* (Holt); About, *Les Mariages de Paris;* Labiche et Martin, *Le Voyage de M. Perrichon;* Sandeau, *Mlle. de la Seiglière;* Augier et Sandeau, *Le Gendre de M. Poirier;* Molière, *L'Avare*, *Le Bourgeois gentilhomme.*

Outside reading: George Sand, *Nanon.*

3 hours. Dr. PAGE

Open to freshmen and sophomores who have passed the entrance examination in French.

2—General introduction to the study of French literature—composition.

Books: Corneille, *Le Cid;* Racine, *Iphigénie* (edited by Woodward), *Les Plaideurs;* Molière, *Les Femmes savantes*, *Le Médecin malgré lui;* Bossuet, *Oraisons funèbres;* Marivaux, *Le Jeu de l'amour et du hasard;* Voltaire, *Prose* (extracts, edited by Cohn and Woodward); Beaumarchais, *Le Mariage de Figaro;* Bowen, *Modern French Lyrics;* Victor Hugo, *Hernani*, *Ruy Blas;* Alfred de Musset, *Selections* (ed. Kuhns); Pailleron, *Le Monde où l'on s'ennuie;* Fontaine, *Les Historiens français du XIXe siècle;* Sainte-Beuve, *Extraits des Causeries du lundi;* Gazier, *Petite Histoire de la littérature française.*

Outside reading: Voltaire, *Le Siècle de Louis XIV;* second half-year, one of the following, to be selected by the student: Mme. de Staël, *Corinne;* Victor Hugo, *Quatrevingt-treize;* A. deVigny, *Cinq-Mars.*

3 hours. Dr. WOODWARD and Professor COHN.

Open to students, not seniors, who have taken Courses A or 1, or their equivalent.

3—French rhetoric.

Books: Larive et Fleury, *Troisième année de grammaire;* Legouvé, *La Lecture en action;* La Fontaine, *Fables;* Thieulin et Le Goffic, *Nouveau Traité de versification française;* Reinach, *L'Eloquence française depuis la Révolution jusqu'à nos jours;* Leune, *Difficult Modern French;* Daudet, *Contes;* Van Daell, *Extraits choisis des œuvres de Paul Bourget;* Fontaine, *Les Poètes français du dix-neuvième siècle.*

Outside reading: Renan, *Pages choisies;* Fontaine, *Les Historiens français du dix-neuvième siècle;* Effinger, *Extraits de Sainte-Beuve.*

3 hours. Mr. LOISEAUX

Open to students who have taken Course 2 or its equivalent.

4—History of French literature in the seventeenth century.

Books: Descartes, *Discours de la méthode;* Pascal, *Les Provinciales* (letters 1, 4, 13, edition Brunetière, Paris Hachette); Corneille, *Théâtre choisi;* Molière, *Œuvres complètes;* Racine, *Œuvres complètes;* Boileau, *L'Art poétique;* Bossuet, *Oraisons funèbres;* La Rochefoucauld, *Maximes;* La Bruyère, *Les Caractères;* Sévigné, *Choix de Lettres;* Crane, *La Société française au dix-septième siècle;* Lanson, *Histoire de la littérature française.* Rambaud's *Histoire de la civilisation française* is strongly recommended as collateral reading.

3 hours. Professor COHN

Open to students who have taken Course 2 or its equivalent.

The following courses, with the exception of Course **12**, are open only to students who have taken at least Course **4**, or who can offer a satisfactory equivalent for the work therein described.

5—History of French literature in the eighteenth century: Voltaire.

Books: Condorcet, *Vie de Voltaire;* Lanson, *Histoire de la littérature française;* Morley, *Voltaire;* Voltaire, *Théâtre choisi* (including *Zaïre*, *Mérope*, *Brutus*, *Mahomet*, *Tancrède*), *Zadig*, *Traité de la tolérance.*

In extracts:—Voltaire's *Lettres philosophiques*, *Dictionnaire philosophique*, *Correspondance*, *etc.*

Rambaud's *Histoire de la civilisation française* is strongly recommended as collateral reading.

3 hours. Professor COHN

6—History of French literature in the eighteenth century: Montesquieu, Rousseau, the Encyclopedists.

3 hours. Dr. WOODWARD

Not given in 1897-98. Will be given in 1898-99.

7—History of French poetry in the first half of the nineteenth century, especially Victor Hugo and the romantic movement.

Books: Chateaubriand, *Atala*, *René;* Mme. de Staël, *Lettres sur J. J. Rousseau*, *De la Littérature*, and *De l'Allemagne;* Lamartine, *Méditations poétiques*, selections from the *Nouvelles méditations* and later works. Victor Hugo, Preface to *Cromwell*, *Hernani*, *Le Roi s'amuse*, *Lucrèce Borgia*, *Ruy Blas*, *Les Burgraves*, many selections from the *Odes et Ballades*, *Les Orientales*, *Les Feuilles d'automne*, and *Les Contemplations*, and some from *Les Chants du crépuscule*, *Les Voix intérieures*, *Les Rayons et les ombres*, and *Les Châtiments* (the most convenient edition of Hugo's works is the small *ne varietur* edition, separate volumes of which sell at two francs, Paris, Hetzel-Quantin); Alfred de Musset, *Poésies* (2 vols.); George Pellissier, *Le Mouvement littéraire au XIXe siècle;* Brunetière, *L'Evolution de la poésie lyrique en France au XIXe siècle;* Lanson, *Histoire de la littérature française.*

1 hour. Dr. PAGE

8—History of French poetry in the second half of the nineteenth century.

Books: Gautier, *Émaux et Camées;* Vigny, *Les Destinées;* Victor Hugo, *La Légende des siècles* (selections); Leconte de Lisle, *Poèmes barbares* and selections from the *Poèmes antiques* and *Derniers Poèmes* (complete works, four volumes, Lemerre); Sully Prudhomme, *Poésies 1866–1872*, one volume, and extracts from the other collections (five volumes in all, Lemerre); Coppée, selections; Banville, *Petit Traité de poésie française*, and selections from his *Poésies complètes* (three volumes, Charpentier); Hérédia, *Les Trophées;* Verlaine, *Choix de poésies* (one volume, Charpentier); Pellissier, *Le Mouvement littéraire au XIXe siècle* (Paris, Hachette); Brunetière, *L'Evolution de la poésie lyrique en France au XIXe siècle;* Lanson, *Histoire de la littérature française.*

1 hour. Dr. PAGE

9—The French dramatists of the nineteenth century.

2 hours. First half-year. Professor BRANDER MATTHEWS

Identical with first half of Literature 4.

Not given in 1897-98. Will be given in 1898-99.

10—Molière and his dramatic method.

1 hour. First half-year. Professor BRANDER MATTHEWS

Identical with first half of Literature 5.

11—History of literary criticism in France, especially Sainte-Beuve and Brunetière.

Books: Brunetière, *L'Evolution des genres dans l'histoire de la littérature* (vol. i.); Paul Bourget, *Essais de psychologie contemporaine, première série;* Hatzfeld et Meunier, *Les Critiques littéraires du XIXe siècle;* Sainte-Beuve, *Causeries du Lundi; Nouveaux Lundis.*

1 hour. Professor COHN

12—History of the French language.

Book: Darmesteter, *Cours de grammaire historique.*

2 hours. Professor TODD

Open to students who have taken Course 2.

13—Old French. Reading of selected extracts.

Books: Clédat, *Morceaux choisis des auteurs français du moyen âge;* Gaston Paris, *La Littérature française au moyen âge; Extraits de la Chanson de Roland.*

2 hours. First half-year only. Dr. WOODWARD

14—The French chroniclers of the middle ages.

Books: Petit de Julleville, *Chroniqueurs français du moyen âge;* Gaston Paris, *La Littérature française au moyen âge.*

2 hours. Second half-year only. Dr. WOODWARD

15—Writers of the sixteenth century, especially Montaigne.

Books: Darmesteter et Hatzfeld, *Le Seizième siècle en France* (Paris, Delagrave); Montaigne, *Essais*—Louandre's edition (Paris, Charpentier) is recommended; Sainte-Beuve, *Tableau historique et critique de la poésie française au seizième siècle.*

1 hour. Mr. LOISEAUX

16—Critical bibliography of French literature from the sixteenth to the nineteenth century. 2 hours. Professor COHN, Dr. WOODWARD, Mr. LOISEAUX, Dr. PAGE.

17—Methods of teaching French. 2 hours. Professor COHN.

Open not only to students in Columbia University, but also to students in the Teachers College.

Seminar—Special topics in romance literature. The French drama from its origins to the death of Racine (1699). 2 hours. Professor COHN

N.B.—For other advanced courses in French language and literature, see under romance philology.

Optional Courses

French conversation (elementary course). 1 hour. Mr. LOISEAUX

French conversation (advanced course). 1 hour. Mr. LOISEAUX

Courses in Provençal

1—Old Provençal.

Books: Appel, *Provenzalische Chrestomathie;* Gröber's *Grundriss* (Strasburg, 1888).

1 hour. Professor TODD

Courses in Italian

1—Elementary course—Grammar, reading, composition.

Books: Grandgent, *Italian Grammar;* Grandgent, *Italian Composition Book;* L. Morandi, *Prose e Poesie.*

3 hours. Professor SPERANZA

Open to all students, not seniors, who have satisfied the requirement in French and German. It may not be taken at the same time with Spanish 1.

2—Italian literature in the sixteenth century. 3 hours. Professor SPERANZA

Not given in 1897–98. Will be given in 1898–99.

Open only to students who have taken Course 1 or its equivalent.

3—Italian literature in the fourteenth and fifteenth centuries, exclusive of the Divina Commedia. Composition.

The literature of the fifteenth century is studied in Bojardo, Pulci, Lorenzo de' Medici, Poliziano and Leon Battista Alberti; that of the fourteenth century in Dante's *Vita nuova*, Petrarca's *Canzoniere* (ediz. A. Bartoli, Firenze, 1883), Dino Compagni's *Cronica fiorentina* (ediz. scolastica I. Del Lungo) and Dante's *Convivio.* Some chapters in A. Bartoli's *I primi due secoli della letteratura italiana*, Zumbini's *Studi sul Petrarca*, etc., are assigned for private reading.

Fr. Torraca, *Manuale della letteratura italiana* (recent edition).

3 hours. Professor SPERANZA

Open only to students who have taken Course 1 or its equivalent.

4—Critical study of Dante's Divina Commedia. 2 hours. Professor SPERANZA

5—History of Italian literature. Lectures and private reading. 1 hour. Professor SPERANZA

N.B.—For other advanced courses in Italian language and philology, see under romance philology.

Courses in Spanish

1—Elementary course. Grammar, reading, composition.

Books: Knapp, *Spanish Grammar;* Galdós, *Doña Perfecta;* P. A. de Alarcon, *El Final de Norma;* Breton de los Herreros, *La Independencia.*

3 hours. Mr. LOISEAUX

Open to all students, not seniors, who have satisfied the requirement in French and German. It may not be taken at the same time with Italian 1.

2—Don Quijote and the time of Cervantes, composition.

Books: Cervantes, *Don Quijote; Entremeses*; *Novelas Ejemplares;* Juan Calderon, *Cervantes Vindicado.*

3 hours. Professor SPERANZA

Open only to students who have taken Course 1 or its equivalent. Not given in 1897–98. Will be given in 1898–99.

3—The classical dramatists of Spain: Lope de Vega, Calderon, etc. Composition. 3 hours. Professor SPERANZA

Open to students who have taken Course 1 or its equivalent.

4—The origins of Spanish poetry. El Poema del Cid. 1 hour. Professor TODD

5—History of Spanish literature. Lectures and private reading. 1 hour. Professor COHN

N.B.—For other advanced courses in Spanish language and philology, see under romance philology.

Courses in Portuguese and Rumanian

Two courses are offered to advanced students, one in Portuguese, the other in Rumanian. Each of them is a course of 2 hours throughout the year.

Courses in Romance Philology

1—Introduction to romance philology. 2 hours. Professor TODD

Open to seniors in Columbia College and to university students.

The following courses are open only to university students:

2—Formative elements of romance speech. Lectures and class work.

Books: Gröber, *Grundriss;* Schwan, *Altfranzösische Grammatik.*

1 hour. Professor TODD

Not given in 1897–98.

3—Old French dialects.

Books: Gröber, *Grundriss;* Bartsch and Horning, *La Langue et la Littérature françaises;* Suchier, *Reimpredigt;* Philippe de Thaon, *Comput* (Mall's edition).

1 hour. Professor TODD

Seminar — Research supplementary to Körting's *lateinisch-romanisches Wörterbuch.* 2 hours. Professor TODD

N.B.—Weekly lectures in French, Italian, and Spanish, open to all members of the University, are given by the members of the department and by distinguished European lecturers.

The Romance Club, which consists of all the instructors and advanced students in the department, holds fortnightly meetings in which the latest contributions to philology and literature in the field of the department are reported upon and discussed.

Equipment

The library of Columbia University is well supplied with French, Spanish, and Italian works, as well as with works upon romance philology. Its list of periodicals of interest for students in the department is especially rich. The library has also complete sets of the most important series and collections, such as the Altfranzösische Bibliothek, Romanische Bibliothek, publications of the

Modern Language Association, publications of the Société des anciens textes français, Histoire littéraire de la France, Ausgaben und Abhandlungen aus dem Gebiete der romanischen Philologie, Jahrbuch für romanische und englische Sprachen, and the like.

Scandinavian

(See page 80)

Semitic Languages

(See page 110)

Sociology and Statistics

(See page 56)

Spanish

(See page 137)

Surgery

WILLIAM TILLINGHAST BULL, M.D. ..... *Professor*
ROBERT F. WEIR, M.D. ..... *Professor*
CHARLES MCBURNEY, M.D. ..... *Professor of Clinical Surgery*
FRANK HARTLEY, M.D. ..... *Clinical Lecturer and Instructor in Operative Surgery*
FRANCIS HARTMAN MARKOE, M.D. ..... *Clinical Lecturer*
BERN BUDD GALLAUDET, M.D. ..... *Clinical Lecturer*
ELLSWORTH ELIOT, JR., M.D. ..... *Chief of Clinic and Instructor in Minor Surgery*
ALEXANDER B. JOHNSON, M.D. ..... *Instructor in Surgery*
LUCIUS W. HOTCHKISS, M.D. ..... *Instructor in Surgery*
CHARLES T. PARKER, M.D. ..... *Assistant Instructor in Operative Surgery*
JOHN B. WALKER, M.D. ..... *Assistant Instructor in Operative Surgery*
LOUIS IRVING MASON, M.D. ..... *Clinical Assistant*
EDWARD M. FOOTE, M.D. ..... *Clinical Assistant*
JOSEPH J. HIGGINS, M.D. ..... *Clinical Assistant*
B. T. TILTON, M.D. ..... *Clinical Assistant*
A. S. VOSBURGH, M.D. ..... *Clinical Assistant*
WALTON MARTIN, M.D. ..... *Clinical Assistant*
J. A. HARTWELL, M.D. ..... *Clinical Assistant*
B. H. WATERS, M.D. ..... *Clinical Assistant*
CHARLES R. L. PUTNAM ..... *Clinical Assistant*

Courses

1—Surgical pathology, general and regional surgery. Didactic lectures. 2 hours. Professors BULL and WEIR

Required, in the third and fourth years, of candidates for the degree of M.D.

2—Clinics in general surgery at the Vanderbilt Clinic. 2 hours. M. at 12. Professors BULL and WEIR

Required, in the third year, of candidates for the degree of M.D.

3—Minor surgery and bandaging. Practical instruction at the Vanderbilt Clinic, and the out-patient department, Roosevelt Hospital. 12 lessons for each student. Dr. ELIOT and Dr. JOHNSON

Required, in the third year, of candidates for the degree of M.D.

4—Operative surgery upon the cadaver. Practical instruction to classes of twenty members each. Each student performs for himself upon the cadaver the principal operations, including the ligation of arteries, amputations, resections, and the removal of parts. Special attention is paid to operations upon the abdominal viscera. 7 to 12 lessons for each student. Drs. HARTLEY, PARKER, and WALKER

Required, in the fourth year, of candidates for the degree of M.D.

5—Practical instruction in surgery to classes of 20 members each in the wards of Bellevue Hospital and the Syms Operating Theatre, Roosevelt Hospital. 16 lessons. Dr. GALLAUDET, Dr. HOTCHKISS, Dr. JOHNSON

Attendance obligatory in the fourth year.

6—Hospital clinics. New York Hospital.
S., 2.30 P.M. Professors BULL and WEIR
Th. 3 P.M. from February to June. Dr. HARTLEY
Roosevelt Hospital, Syms Operating Theatre.
S., 2.30 P.M. Professor MCBURNEY
Presbyterian Hospital.
Tu., 3 P.M. Professor MCCOSH
Bellevue Hospital.
Tu., 2.30 P.M. Drs. GALLAUDET and MARKOE
St. Luke's Hospital.
Fri., 2.30 P.M. October to February. Dr. MARKOE

Attendance at the above clinics is optional.

Zoölogy

HENRY FAIRFIELD OSBORN, Sc.D.....*Professor*
EDMUND B. WILSON, Ph.D.....*Professor*
BASHFORD DEAN, Ph.D.....*Adjunct Professor*
GARY N. CALKINS, B.S.....*Tutor*
OLIVER S. STRONG, Ph.D.....*Tutor*
HENRY E. CRAMPTON, Jr., A.B.....*Lecturer*
JAMES H. MCGREGOR, A.M.....*Assistant*

The courses in this department are all elective, and lead to the degrees of A.B., A.M., and Ph.D. They consist of lectures followed by practical work in the laboratory, and are arranged consecutively, advancing from instruction belonging properly to a liberal education up to the most advanced and special work.

A—Introductory biological courses. Courses 1 and 2 give an introduction to the principles of animal biology as part of the general education of scientific and academic students. Course 1 is intended for students in the Schools of Applied Science as the preparation for subsequent studies in geology and palæontology. 2 is a biological course especially designed, first, for college students electing science for purposes of general culture, second, as an introduction to more advanced courses in zoölogy, botany, and physiology, and, third, as a partial preparation for students intending to study medicine.

B—Intermediate zoölogical course. 3, which naturally follows 2, covers a wider range, and is intended for students preparing for more advanced work in zoölogy, and for medicine, physiology, embryology, botany, palæontology, and geology. This course is the second stage of preparation for major work in zoölogy and, under the conditions stated below, may constitute one half the requirement for a minor.

C—University courses. Courses 4 to 12, founded upon 2 and 3, may be so combined as to carry the student progressively forward to the most highly specialized study and research. (1) A major in zoölogy requires, after Courses 2 and 3 (or their equivalent), Courses 5 and 6, and the equivalent of at least one additional full-year course in addition to research. (2) For a minor, Course 3 (or its equivalent) constitutes one half the requirement in the case only of students who have not taken this course as undergraduates; the remaining half comprises any one of the full-year courses, 4, 5, 8, or any two of the half-year courses, 6, 7, 9, 10, 12. Where students have been able to take Course 3 as undergraduate work, a minor comprises in addition the equivalent of two full-year or four half-year courses.

The lecture and laboratory courses are conducted upon the fourth floor of Schermerhorn Hall. In addition to the regular instruction, series of more popular "University Lectures" are from time to time offered by members of the staff and others. These are given in the general lecture room on the first floor of Schermerhorn Hall.

Elementary Courses

1—Elementary zoölogy. A systematic and descriptive course, including a brief review of the general principles of zoölogy, especially classification, distribution, heredity, evolution. Particular reference to extinct forms.

Text-books: Packard's *Elements of Zoölogy*.

Professor DEAN and Mr. CALKINS

Open to students under the Faculty of Applied Science, 2 hours, second half-year. Lectures and demonstrations.

2—Elementary biology (zoölogy). Introductory to morphology and physiology, and to the general principles of biology.

For the year 1897–98 this work is arranged in a longer and a shorter course, consisting of 3 and 2 exercises a week respectively. The shorter course omits the work in histology and embryology. In this course a detailed study of a series of living forms is made the basis for brief discussions of essential principles.

First Half-Year

(a)—General biology. 2 exercises a week throughout the first quarter-year. General introduction. Protoplasm and the cell. Biology of the earth-worm and the fern. Unicellular organisms: Amœba, pleurococcus, yeast, bacteria, influsoria. Spirogyra, hydra, hydroids. Professor WILSON

(b)—Elementary zoölogy (invertebrates). 2 exercises a week throughout the second quarter-year. The earth-worm, lobster, crab, insect, muscle, starfish, ascidian. Professor WILSON

(c)—Elementary histology (longer course). 1 exercise a week throughout the half-year. General study of animal cells and tissues. Mr. CALKINS

Second Half-Year

(d)—Elementary zoölogy (vertebrates). 2 exercises a week. The lancelet, dogfish, frog, pigeon, turtle, and rabbit. In addition the main problems of evolution and heredity are briefly explained. Professor OSBORN

(e)—Embryology of the chick (longer course). 1 exercise a week. Development of the bird and the elementary principles of general embryology. Professor DEAN

Text-books: Sedgwick and Wilson, *General Biology;* Marshall and Hurst's *Practical Zoölogy;* Osborn's *Greeks to Darwin.* Reference books: Parker's *Elementary Biology;* Thomson's *Zoölogy;* Foster and Balfour's *Elements of Embryology.*

Open to juniors and seniors. 2 or 3 lectures and 4 or 6 hours laboratory work throughout the year.

Intermediate Course

3—General zoölogy. Vertebrate and invertebrate zoölogy, anatomy, embryology, and ætiology (natural environment, terrestrial and marine faunal areas, principles of distribution).

(a)—Classification and comparative anatomy of the main living orders of fishes, amphibians, reptiles, birds, and mammals. Practical study of the nervous, vascular, alimentary systems, and the like. Professor DEAN

(b)—Embryological development of the bird, amphibian, fish, embryological technique. Professor DEAN

(c)—Comparative morphology, classification, and general zoölogy of invertebrates. Mr. CALKINS

Text-books: Wiedersheim's *Comparative Anatomy;* Parker's *Zoötomy;* Hertwig's *Zoölogy.*

Open to seniors and graduates. 3 lectures and 6 hours laboratory work throughout the year. The course in elementary biology (2) is a pre-requisite for this course. Students who have previously taken only the shorter course (2—a, b, d) will be required to make up the work included in Courses 2c, 2e.

University Courses

Each of the following courses includes a lecture and one or two days of practical work.

4—Comparative neurology. An introduction to the comparative structure of the brain and nervous system of the lower and higher animals. The invertebrate

nervous system is broadly treated, as throwing light upon general neurological questions as to the origin and structure of the nervous system. The vertebrate nervous system is studied more in detail, as also leading to a better comprehension of the nervous system of man. Primitive vertebrate system in the lancelet. Comparative anatomy of the brain, spinal cord, and nerves in fishes, amphibians, reptiles, birds, and mammals. Training in Weigert, Golgi, and other technical methods.

Text-books: Edinger's *Twelve Lectures upon the Nervous System;* also the works of Golgi, Cajal, Obersteiner, Lenhossek, and others.

DR. STRONG

Open to advanced seniors and graduates. Seniors 1 morning (3 hours) a week throughout the year. Graduates 1 day a week. Lectures and laboratory work throughout the year. A shorter supplementary course may be offered the second half-year to supply a more thorough training in neurological technique.

5—Comparative zoölogy. This course completes the general systematic and morphological training begun in Courses **2** and **3**. General anatomy and development of vertebrates and invertebrates, with special reference to the problems of phylogeny and classification. Training in anatomical and embryological technique. Lectures and laboratory work. 10 hours (2 days) a week. Wiedersheim's *Grundriss der Vergleichenden Anatomie der Wirbelthiere*, Parker's *Zoötomy*, Lang's *Comparative Anatomy*. Special works, monographs, and papers are extensively used in this course. Professors OSBORN and WILSON

6—Comparative embryology. A general comparative treatment of the earlier stages of development, with especial reference to the lower vertebrates. 6 hours (1 day) a week through the first half-year (parallel with Course **5**). Hertwig's *Embryology;* Marshall's *Embryology*. Professor WILSON

7—Cellular biology. General structure and functions of the cell. 6 hours (1 day) a week through the second half-year. Hertwig, Zelle, and Gewebe; Wilson's *Cell*. Professor WILSON

8—Morphology of the mammals. A study of the structure and development of fossil and recent mammals. Lecture and laboratory courses. Reference books: Flower's *Osteology;* Flower and Lydekker's *Mammals;* Zittell's *Palæontologie*. 6 hours (1 day) a week. Professor OSBORN

The latter part of this course is given in the American Museum of Natural History.

9—Morphology of the fishes. The comparative anatomy of the fishes, recent and fossil. 1 lecture a week during second half-year. Reference books: Smith Woodward's *Catalogue of Fossil Fishes*. 6 hours (1 day). Professor DEAN

Open also to students under the Faculty of Applied Science in certain courses.

10—Special morphology—the Protozoa. A general treatment of the classification, morphology, and physiology of this type of organisms, and of their relations to modern theories of biology. 1 lecture a week during second half-year. Bütschli, Protozoa in Bronn's *Thierreich*. Mr. CALKINS

To alternate with **10a**.

10a—Special morphology—the Bryozoa. Structure and development of the Bryozoa, with special reference to their taxonomic position. 1 lecture a week during second half-year. Mr. CALKINS

To alternate with **10**; will be given in 1898–99.

11—Advanced biology. Study of special groups of animals or of special biological problems as an introduction to original investigation. 12 hours (2 days).

12—Vertebrate organogeny. The development of the principal vertebrate organs, brain, heart, alimentary and respiratory systems, skeleton of the head, trunk, and limbs. Bearing upon problems of vertebrate phylogeny. This course is given in second half-year, alternating with 5 in 1894–95 and in 1897–98. Open to graduates. Lecture and 4 hours laboratory work. Professors OSBORN and DEAN

NOTE.—Professor Osborn will be absent during 1898, and will resume his lectures in Feb., 1899.

Biological seminar. Informal discussion and criticism of biological theories in connection with the history of zoölogy. Conducted by officers of the department and graduate students. Wednesdays, 4.30–5.30 P.M.

Equipment

LABORATORIES AND MUSEUM. The new zoölogical laboratories on the upper floor of Schermerhorn Hall comprise a large general undergraduate laboratory, two graduate laboratories, a laboratory for neurology, and eight rooms for private research, besides special rooms for supplies, aquaria, and preparation, and a commodious lecture room, library, and seminar room. The laboratories are well equipped with optical instruments, microtomes, and other apparatus for advanced morphological work. The teaching collections include a large series of the Mediterranean and American marine types, the injected vertebrate series of Fric and Muller, an extensive set of standard and specially prepared charts and wax models, and a variety of living animals and plants contained in fresh-water and marine aquaria.

LIBRARY. The departmental library, a part of the University library kept in the laboratory, the gift of Charles H. Senff, Esq., is a memorial to the late Dr. Northrop, and embraces full sets of the standard biological works, including the journals and a rapidly increasing collection of memoirs and special monographs. A fund is available for the purchase of literature needed in connection with the special researches of students. Forty-three of the current biological journals are subscribed for.

JOURNAL CLUB. One of the special features of the department is the Journal Club, open to instructors and all advanced students, and meeting every week in the library to report upon special investigations and to present abstracts of articles of special importance in the journals.

PUBLICATION. The more important papers published from the laboratory are to be collected and reissued in *Zoölogical Contributions from Columbia University*. The *University Press* issues the *Columbia University Biological Series*, a number of educational volumes originally founded upon public lectures, of which four have already appeared. Another feature in advanced instruction is connected with the biological section of the New York Academy of Sciences, which affords opportunities for public reading, discussion, and printing of scientific papers.

FIELD AND MARINE ZOÖLOGY. The summer study of marine zoölogy is provided for in the connection of the department with the Marine Biological Laboratory at Wood's Holl, Mass., including subscription for an investigator's room. Local zoölogical excursions are made in spring and fall. For two seasons special expeditions have been sent out to the northwest coast and to Alaska. The Western palæontological collections in the American Museum of Natural History are open to certain advanced students of vertebrate morphology.

UNIVERSITY DEGREES

Regulations for the Degrees of Master of Arts and Doctor of Philosophy

1. Candidates for the degrees of master of arts and doctor of philosophy must hold a baccalaureate degree in arts, letters, philosophy, or science, or an engineering degree, or an equivalent of one of these, from a foreign institution of learning.

The deans of the several schools will require candidates for the higher degrees to present satisfactory evidence that they are qualified for the studies they desire to undertake.

2. Candidates for the degrees of master of arts and doctor of philosophy must pursue their studies in residence for a minimum period of one and two years, respectively. The year spent in study for the degree of master of arts is credited on account of the requirement for the degree of doctor of philosophy. Residence at other universities may be credited to a candidate. In certain cases and by special arrangement, time exclusively devoted to investigation in the field will be credited in partial fulfilment of the time required. No degree will be conferred upon any student who has not been in residence at Columbia University for at least one year.

3. Each student who declares himself a candidate for the degree of master of arts and doctor of philosophy, or either of them, shall, immediately after registration, designate one principal or major subject and two subordinate or minor subjects, which shall be the studies of his university course.

4. The subjects from which the candidate's selection must be made are:

UNDER THE FACULTY OF PHILOSOPHY:

I. *Major Subjects:* 1. Philosophy; 2. psychology; 3. education; 4. linguistics; 5. literature; 6. music; 7. classical archæology and epigraphy; 8. Greek language and literature, and, incidentally, Grecian history; 9. Latin language and literature, and, incidentally, Roman history; and the following, *including in each case the study of both the language and the literature:* 10. English; 11. Germanic; 12. Romance; 13. Sanskrit (with Pālī) and Iranian; 14. Semitic; 15. anthropology. Nos. 5, 11, 12, 13, and 14 count each as the equivalent of a major and one minor subject.

II. *Minor Subjects:* 1. Philosophy; 2. psychology; 3. logic; 4. education; 5. anthropology; 6. linguistics; 7. literature; 8. music; 9. Greek; 10. Greek archæology; 11. Latin; 12. Roman archæology; 13. Sanskrit; 14. Iranian; 15. English; 16. Anglo-Saxon; 17. Gothic; 18. Germanic philology;

19. German language and literature ; 20. Scandinavian languages and literatures ; 21. Romance philology ; 22. French language and literature ; 23. Spanish language and literature ; 24. Italian language and literature ; 25. Hebrew ; 26. Arabic ; 27. Assyrian ; 28. Syriac ; 29. Ethiopic ; 30. Semitic epigraphy ; 31. Turkish ; 32. Armenian.

In his choice of subjects under this faculty, the candidate is limited by the regulation that not more than two of the three subjects may be selected from those offered by any one department. A major subject will involve attendance at lectures and seminars amounting to four or more hours weekly ; a minor subject will involve attendance of two or more hours weekly.

Under the Faculty of Political Science :

Group I.—History and political philosophy : 1. European history ; 2. American history ; 3. political philosophy.

Group II.—Public law and comparative jurisprudence : 1. Constitutional law ; 2. international law ; 3. criminal law ; 4. administrative law ; 5. comparative jurisprudence.

Group III.—Economics and social science : 1. Political economy and finance ; 2. sociology and statistics.

In his choice of subjects under this faculty, the candidate is limited by the regulation that not more than two of the three subjects may be selected from any one of the above groups, and by the following rules :

Candidates offering European history as the major subject, must offer American history as one of the minor subjects, and *vice versa*.

Candidates offering political economy and finance as the major subject, must offer sociology and statistics as one of the minor subjects, and *vice versa*.

Candidates will not be permitted to offer constitutional law alone as the major subject for the degree of doctor of philosophy, but must combine with it the course on general international law or on comparative administrative law.

Candidates offering international law, or criminal law, or administrative law as the major subject, must take constitutional law as one minor subject.

Candidates will not be permitted to offer criminal law alone as the major subject for the degree of doctor of philosophy, but must combine with it the course on general international law.

To be recognized as a major subject for the degree of master of arts the courses selected must aggregate at least two hours per week throughout the year, and must also include attendance at a seminar ; for a minor subject for the degree of master of arts, the attendance at a seminar is not required.

To be recognized as a minor subject for the degree of doctor of philosophy, courses must be taken, in addition to the requirements for a minor subject for the degree of master of arts, aggregating two hours weekly. To be recognized as a major subject for the degree of doctor of philosophy, all of the courses and seminars offered in that subject must be taken.

Under the Faculty of Pure Science :

Mathematics ; mechanics ; astronomy ; geodesy ; physics ; chemistry ; mineralogy ; geology ; palæontology ; lithology ; biology ; botany ; physiology ; anatomy ; bacteriology.

In his choice of subjects under this faculty, the candidate is limited by the regulation that no two of the subjects selected may be in any one department, unless the consent of the faculty thereto shall have first been obtained. Candidates are expected to devote at least one half their time throughout their course of study to the major subject. In the case of laboratory courses this implies two days a week, or its equivalent, as determined by each department. Each minor subject is intended to occupy approximately one fourth of the time during one year for the degree of master of arts, and during one or two years, according to the nature of the subject and the previous training of the candidate, for the degree of doctor of philosophy. Students may distribute the remainder of their time either in courses of major or minor reading in branches where their preparation is least complete, or in researches connected with their major subject.

UNDER THE FACULTY OF APPLIED SCIENCE:

Mining, metallurgy, engineering (civil, mechanical, electrical, and sanitary), and architecture.

The Faculty of Applied Science requires that at least one minor subject shall be taken under the Faculty of Pure Science.

A minor subject may be taken in the same department as the major, but no two minors may be taken in the same department. It is expected that fully half of the student's time throughout the course of study shall be devoted to the major subject, and one quarter of the time during one year and an equal portion of the second year, if necessary, to each of the minor subjects.

5. Each student is given a registration book, which is signed by the professor or instructor in charge of each course of instruction or investigation at the beginning and end of every such course. This registration book is to be preserved by the student as evidence of work accomplished, and should be submitted to the deans of the several faculties at the end of each year, that proper credit may be given and entered on the permanent records of the institution.

6. Students desiring to be examined as candidates for any degree must make written application for such examination to the dean of the proper faculty, on blank forms provided for the purpose. All such applications must be made on or before April 1st of the academic year in which examination is desired, and must be accompanied with the candidate's registration book.

7. Each candidate for the degree of master of arts shall present an essay on some topic previously approved by the professor in charge of his major subject. Before the candidate is admitted to examination the professor in charge of his major subject must have signified his approval of such essay. This essay must be presented not later than May 1st of the academic year in which the examination is to take place. The Faculty of Political Science requires this essay to be a paper read during the year before the seminar of which the candidate is a member.

8. Each candidate for the degree of doctor of philosophy shall present a dissertation embodying the result of original investigation and research, on some topic previously approved by the faculty. When such dissertation has been approved by the faculty, it shall be printed by the candidate, and one hundred and fifty copies shall be delivered to the faculty, unless for reasons of

weight a smaller number be accepted by special action of the University Council. On the title page of every such dissertation shall be printed the words: "Submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy, in the Faculty of ————, Columbia University." There shall be appended to each dissertation a statement of the educational institution that the author has attended, a list of the degrees and honors conferred upon him, as well as the titles of any previous publications.

All dissertations for the degree of doctor of philosophy must be submitted for approval not later than April 1st of the academic year in which examination is desired.

The several faculties have delegated the power to approve the subject chosen for his dissertation by any candidate for the degree of doctor of philosophy, as well as the power to approve the dissertation itself, to the professor in charge of the candidate's major subject.

The Faculty of Philosophy requires the submission and approval of the dissertation before the candidate is admitted to examination.

In the Faculty of Political Science, with the consent of the dean and the professor in charge of the candidate's major subject, the examination may be held before the printed dissertation is submitted.

The Faculty of Pure Science requires the dissertation to be printed in the size and form either of the Annals or Memoirs of the New York Academy of Sciences, according to the nature of the subject, and the printed dissertation must be delivered to the faculty before the final examination.

The Faculty of Applied Science requires the dissertation to be printed in the size and style of the School of Mines Quarterly, and delivered to the faculty not later than May 1st of the academic year in which the examination is to take place.

9. Every candidate for the degree of doctor of philosophy, in addition to passing such other examinations as may be required by the faculty, shall be subjected to an oral examination on his major subject, and shall defend his dissertation, in the presence of the entire faculty, or of so many of its members as may desire to attend. The ability to read at sight Latin, French, and German is required by the faculties of Philosophy and Political Science; the ability to read at sight French and German is required by the faculties of Pure Science and of Applied Science, to be certified in each case by the dean of the faculty concerned.

10. Students holding college degrees, who shall have completed with marked distinction one of the regular courses in the School of Law, the School of Medicine, the School of Mines, the School of Chemistry, the School of Engineering, or the School of Architecture, may be recommended for the degree of master of arts; provided that in each case the candidate presents a satisfactory dissertation, and that at least a part of the extra work required of him for the degree of master of arts be taken under the direction of either the Faculty of Philosophy, the Faculty of Political Science, or the Faculty of Pure Science, to the extent of a minor course for not less than one year.

11. No student shall continue to be a candidate for the degree of doctor of philosophy for a longer period than three years from the time he ceases to be in residence.

Regulations for the Degree of Master of Laws.

1. Any student who has satisfactorily completed the regular course of study in Columbia College, to the close of the junior year, or in some other college maintaining an equivalent curriculum (every such case of equivalency to be considered on its own merit), shall be entitled to be recommended for the degree of master of laws upon certificates from the Faculty of Law and the Faculty of Political Science that he has satisfactorily completed a four years' course of study under said faculties.

2. Every candidate for the degree of master of laws must elect from the subjects offered by said faculties, courses aggregating, in the four years, fifty-two hours per week, and must pass satisfactory examinations upon the subjects elected ; provided that not more than thirty-four hours of work may be elected either in the field of Private Law, or in that of Public Law, Social Ethics, History, and Economics.

3. Students, otherwise qualified, who have received the degree of bachelor of laws from this University, after pursuing the full course of study, shall be entitled, upon pursuing for an additional year a course of study of at least thirteen hours per week, under either or both of said faculties, and passing satisfactory examinations therein, to receive the degree of master of laws ; provided that no student shall receive the degree who has not studied and passed satisfactory examinations in Comparative Constitutional Law, Administrative Law, Roman Law, International Law, and in the three courses offered on Equity,[1] and who has not pursued here, or elsewhere, courses of instruction satisfactory to the Faculty of Political Science in History, Social Ethics, and Economics.

4. Each faculty shall determine the order in which the subjects offered by it shall be taken, and the maximum amount of work to be done therein during any one year.

5. Students from other universities, colleges, or law schools who shall have satisfactorily completed a course of study equivalent to at least one term of thirteen hours per week in the subjects indicated in Section 2, after receiving a bachelor's degree, may be excused from the corresponding number of terms of the four years' residence required at Columbia, provided that in no case shall any one receive the degree of master of laws who has not spent at least four years in the study of the said subjects in some university, college, or law school ; and the decision whether work at another institution shall be accepted as equivalent to work at Columbia, shall rest, as far as the studies under the Faculty of Law are concerned, with the Faculty of Law, and as far as the studies under the Faculty of Political Science are concerned, with the Faculty of Political Science. But neither faculty shall admit a student from another university, college, or law school, to examination for the degree of master of laws without a residence of at least one term in this University.

[1] Under this provision students would be allowed, but not required, to take History of European Law, Conflict of Private Law, Law of Municipal Corporations, and the Law of Taxation.

COLUMBIA COLLEGE

The following departments are represented in the Faculty:

ASTRONOMY
BIOLOGY
BOTANY
CHEMISTRY
ENGLISH
  ENGLISH LANGUAGE AND LITERATURE
  LITERATURE
  RHETORIC AND ENGLISH COMPOSITION
GEOLOGY
GERMANIC LANGUAGES AND LITERATURES
GREEK
HEBREW
HISTORY
LATIN
MATHEMATICS
MECHANICS
PHILOSOPHY, ETHICS, AND PSYCHOLOGY
PHYSICS
POLITICAL ECONOMY
ROMANCE LANGUAGES AND LITERATURES

Officers of the Faculty

Ex-Officio Members of the University Council

J. H. Van Amringe, Ph.D., L.H.D., LL.D. ..... *Dean*
H. T. Peck, Ph.D., L.H.D. ..... *Secretary*

Standing Committees for 1897-98

Committee on Curriculum and Scheme of Attendance

Professor Van Amringe, *Chairman*
" Mayo-Smith
" Butler
" Woodberry
" Perry

Committee on Free and Reduced Tuition

Professor Van Amringe, *Chairman*
" Price
" Rees

Committee on Entrance Examinations

Professor Peck, *Chairman*
" W. H. Carpenter
" Cohn
" G. R. Carpenter
" Fiske
" Wheeler

Committee on Honors

Professor Peck, *Chairman*
" Hallock
" Woodward

The Faculty

SETH LOW, LL.D., *President*

J. HOWARD VAN AMRINGE, Ph.D., L.H.D., LL.D., *Professor of Mathematics*

OGDEN N. ROOD, A.M., *Professor of Physics*

CHARLES F. CHANDLER, Ph.D., M.D., LL.D., *Professor of Chemistry*

JOHN W. BURGESS, Ph.D., LL.D., *Professor of Political Science and Constitutional Law*

RICHMOND MAYO-SMITH, Ph.D., *Professor of Political Economy and Social Science*

THOMAS R. PRICE, LL.D., *Professor of the English Language and Literature*

JOHN KROM REES, E.M., Ph.D., *Professor of Astronomy*

H. T. PECK, Ph.D., L.H.D., *Professor of the Latin Language and Literature*

NICHOLAS MURRAY BUTLER, Ph.D., *Professor of Philosophy and Education*

EDWIN R. A. SELIGMAN, LL.B., Ph.D., *Professor of Political Economy and Finance*

WILLIAM H. CARPENTER, Ph.D., *Professor of Germanic Philology*

ADOLPHE COHN, LL.B., A.M., *Professor of the Romance Languages and Literatures*

GEORGE EDWARD WOODBERRY, A.B., *Professor of Literature*

EDWARD DELAVAN PERRY, Ph.D., *Jay Professor of the Greek Language and Literature*

A. V. WILLIAMS JACKSON, L.H.D., Ph.D., *Professor of the Indo-Iranian Languages*

RICHARD J. H. GOTTHEIL, Ph.D., *Professor of Rabbinical Literature and the Semitic Languages*

WILLIAM A. DUNNING, Ph.D., *Professor of History*

HENRY F. OSBORN, D.Sc., *Da Costa Professor of Biology*

JAMES F. KEMP, E.M., *Professor of Geology*

EDMUND B. WILSON, Ph.D., *Professor of Invertebrate Zoölogy*

WILLIAM HALLOCK, Ph.D., *Adjunct Professor of Physics*

ROBERT S. WOODWARD, C.E., Ph.D., *Professor of Mechanics*

GEORGE R. CARPENTER, A.B., *Professor of Rhetoric and English Composition*

HENRY A. TODD, Ph.D., *Professor of Romance Philology*

THOMAS SCOTT FISKE, Ph.D., *Adjunct Professor of Mathematics*

JAMES RIGNALL WHEELER, Ph.D., *Professor of Greek*

JAMES C. EGBERT, Jr., Ph.D., *Adjunct Professor of Latin*

JAMES H. HYSLOP, Ph.D., *Professor of Logic and Ethics*

CARLO L. SPERANZA, A.M., *B. ès L., Adjunct Professor of the Romance Languages and Literatures*

CALVIN THOMAS, A.M., *Professor of the Germanic Languages and Literatures*

LUCIEN M. UNDERWOOD, *Professor of Botany*

Emeritus Officers

*HENRY DRISLER, LL.D., *Emeritus Professor of the Greek Language and Literature*

JOHN D. QUACKENBOS, A.M., M.D., *Emeritus Professor of Rhetoric*

For details as to other officers of instruction see departmental statements.

* Died November 30, 1897.

Admission

1. Entrance examinations will be held at the College on the day of the Annual Commencement in June, and the three days immediately following, and on the last Monday in September and the three days immediately following. In 1898 the examinations will begin on June 8 and September 26. There will be two examinations daily: one session from 9.30 A.M.–12 M.; the other from 1.30 P.M.–4 P.M.

2. Each applicant for admission to the Freshman class must comply with the requirements and file with the Dean, at least one week before the day fixed for the entrance examinations, a certificate from his principal instructor containing a definite statement of the subjects which he is qualified to offer for examination, and a certificate of good moral character from his last teacher or from some citizen in good standing. No student will be examined in June, 1898, whose name is not enrolled and whose certificate is not filed on or before June 1, 1898; nor will any student be examined in September, 1898, whose name is not enrolled and whose certificate is not filed on or before September 19, 1898. Blank forms of the certificate required can be had on application to the Dean. In the case of students expecting to be examined at a distance from the College, the names must be enrolled and the certificates filed one week earlier.

3. The College offers special courses of study to young men of proper age and character, who wish, without reference to any degree, to make a serious study of any special subject, or group of subjects. Each candidate for admission to such special courses must make application in writing to the Dean, and show evidence of good character and of special fitness for the study that he wishes to pursue. Each candidate will be examined:

1. In English composition by the Professor of Rhetoric, to ascertain whether he is able to use the language correctly.
2. In each special study by the head of the department concerned, to ascertain whether he is competent to enter upon the course.

The candidate should present himself for examination in English not later than the Monday preceding the opening of the College in October (Sept. 26, 1898).

Except for reasons of weight, no one will be received as a special student who has, within ten months of the time of his application, been rejected as a regular student by the Committee on Entrance Examinations, or has, within that time, become deficient as a regular student.

4. The entrance examination is designed to test the ability of the candidate to undertake the course of study, and not merely to ascertain the character and the amount of his acquired knowledge.

5. The curriculum requires an elementary knowledge of *both* French and German of all candidates for the degree of Bachelor of Arts. In the case of students who offer Greek at entrance, one modern language is required for admission, and a five-hour course in the second modern language is prescribed during the Freshman year. Students are encouraged to offer both modern languages at entrance, as they will then be relieved of the obligation to pursue a

modern language during the Freshman year, and the time thus gained may be devoted to elective studies.

6. Students who do not offer Greek at entrance must offer both French and German, and are thus relieved of the obligation to pursue one of those studies in College. On the other hand, they must take in rhetoric a five-hour course during the Freshman year.

7. But one alternative for Greek is allowed, namely, advanced mathematics, natural science, and a second modern language.

8. All candidates for admission to the Freshman class must pass satisfactory examinations in the following subjects:

ENGLISH, LATIN, and MATHEMATICS,

and also in one of the following groups of subjects:

I { GREEK / FRENCH } II { GREEK / GERMAN } III { ADVANCED MATHEMATICS / FRENCH / GERMAN / A NATURAL SCIENCE WITH LABORATORY WORK { CHEMISTRY / PHYSICS / or / BOTANY } }

9. Students are designated in accordance with the subjects they present at entrance, as follows:

Group I Offering Greek and French

Group II Offering Greek and German

Group III Offering advanced mathematics, natural science, French, and German

English:

10. No applicant will be accepted in English whose work is notably defective in point of spelling, grammar, idiom, punctuation, or division into paragraphs.

1. Reading and Composition.—The candidate will be required to present evidence of a general knowledge of the subject-matter of the prescribed books, and to answer simple questions on the lives of their authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to show the candidate's power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. In place of a part or the whole of this test, the candidate may present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The candidate is expected to read intelligently all the books prescribed. He should read them as he reads other books; he is not expected to know them minutely, but to have freshly in mind their most important parts. In preparation for this part of the requirement, it is important that the candidate shall have been instructed in the fundamental principles of rhetoric.

Candidates offering this part of the requirement as a preliminary subject should be prepared on the books prescribed for the year in which they are to take their final examination, *i. e.*, preliminary candidates who are to be examined on part 2 of the English requirement in 1899 should be prepared on the books in the 1899 list.

The books prescribed for this part of the examination are as follows:

In 1898: Milton's Paradise Lost, Books I and II; Pope's Iliad, Books I and XXII; The Sir Roger de Coverley Papers in The Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Ancient Mariner; Southey's Life of Nelson; Carlyle's Essay on Burns; Lowell's Vision of Sir Launfal; Hawthorne's House of the Seven Gables.

In 1899: Dryden's Palamon and Arcite; Pope's Iliad, Books I, VI, XXII, and XXIV; The Sir Roger de Coverley Papers in The Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Ancient Mariner; De Quincey's Flight of a Tartar Tribe; Cooper's Last of the Mohicans; Lowell's Vision of Sir Launfal; Hawthorne's House of the Seven Gables.

In 1900: Dryden's Palamon and Arcite; Pope's Iliad, Books I, VI, XXII, and XXIV; The Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Scott's Ivanhoe; De Quincey's Flight of a Tartar Tribe; Cooper's Last of the Mohicans; Tennyson's Princess; Lowell's Vision of Sir Launfal.

2. Study and Composition.—This part of the examination presupposes the thorough study of each of the works named below. The examination will be upon subject-matter, literary form, and grammatical and logical structure. After 1898 the candidate may be required, in addition, to answer questions involving the essentials of English grammar, and questions on the leading facts in those periods of English literary history to which the prescribed works belong.

In connection with the reading and study of the required books, parallel or subsidiary reading should be encouraged, and a considerable amount of English poetry should be committed to memory. The essentials of English grammar should not be neglected in preparatory study.

The books prescribed for this part of the examination are as follows:

In 1898: Shakspere's Macbeth; Burke's Speech on Conciliation with America; De Quincey's Flight of a Tartar Tribe; Tennyson's Princess.

In 1899: Shakspere's Macbeth; Milton's Paradise Lost, Books I and II; Burke's Speech on Conciliation with America; Carlyle's Essay on Burns.

In 1900: Shakspere's Macbeth; Milton's Paradise Lost, Books I and II; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison.

Latin:

3. Five books of Cæsar's Commentaries on the Gallic War.

4. Six orations of Cicero; reading at sight a short passage of easy Latin prose.

5. The first six books of Vergil's Æneid.

6. Prosody.

7. Grammar and prose composition. (As to the latter, Daniel's Exercises in Latin Prose Composition, both parts, indicates the field to be covered.)

Candidates will be required to show a fair degree of knowledge of the general history of Rome.

Mathematics :

8. Arithmetic: greatest common divisor and least common multiple, common and decimal fractions, percentage not including its commercial applications, square root, and the metric and other ordinary systems of weights and measures. Special importance is attached to accuracy and facility in calculation.

9. Algebra : factors, common divisors and multiples, fractions, equations of the first degree with one or more unknown quantities, involution, including the binomial theorem for positive entire exponents, evolution, the doctrine of exponents, radicals and equations involving radicals, and putting problems into equations.

10. Geometry: plane geometry, including the solution of simple original exercises and numerical problems.

I—*Greek :*

11. Xenophon's Anabasis, Books I. and II.

12. Xenophon's Anabasis, Books III. and IV. ; reading at sight a short passage of easy Greek Prose.

13. Three books of Homer's Iliad, with prosody.

14. Grammar and prose composition. (As to the latter, Jones's Exercises in Greek prose Composition indicates the field to be covered.)

Candidates will be required to show a fair degree of knowledge of the general history of Greece.

French :

15. The ability to read easy French, such as Rambaud's Histoire de la Civilisation Française, and

16. The elements of French Grammar ; or

II—*Greek* as in I, 11, 12, 13, 14.

German :

17. The ability to read easy German, such as Andersen's or Grimm's Märchen, and

18. The elements of German grammar.

III—*Mathematics* as in 8, 9, 10 ; and in addition :

19. Algebra : quadratic equations of one and two unknown quantities and equations solved like quadratics, ratio and proportion, variation, arithmetical and geometrical progressions, the principle of undetermined coefficients including its application to series and partial fractions, variables and limits, convergency of series, the binomial theorem for fractional and negative exponents, logarithms, including the exponental and logarithmic series, permutations, combinations, and probability. [Equivalent of these topics as treated in the College Algebra of Wentworth or Wells.]

20. Geometry : volumetric and spherical geometry. [Equivalent of Davies's Legendre, Books 6–9.]

French as in I, 15 and 16.
German as in II, 17 and 18.

Chemistry :

21. The non-metallic elements, as usually given in high-school text-books.

22. An approved laboratory course of at least forty experiments actually performed at school, by the candidate, as given in Remsen's, or Armstrong and Norton's Laboratory Manuals ; or

Physics :

23. The equivalent of Hall and Bergen's text-book of Physics ;

24. An approved laboratory course of at least forty experiments, actually performed at school by the candidate ; or

Botany :

25. The equivalent of Bergen's text-book of Botany.

26. An approved laboratory course involving the detailed examination of not less than forty plants.

11. In June, 1898, candidates may offer the requirements in Latin, Greek, French, and German detailed above, or, as an alternative, the following, which are those recommended by the conferences on uniform entrance requirements held at Columbia University, February 1, 1896, and will be obligatory on and after January 1, 1899:

Latin :

1. The translation of passages selected from the portions of Cicero and Vergil specified in 1, *c* and *d* (see page 157), with questions designed to test the candidate's understanding of the passages, and also questions on the subject-matter.

2*a*. The translation at sight of passages adapted to the proficiency of candidates who have studied Latin in a systematic course of at least five lessons a week for three years, the passages to be selected from Nepos, Cæsar, and Ovid, or from other simple prose and verse.

2*b*. The translation at sight of passages adapted to the proficiency of candidates who have studied Latin in a course of at least five lessons a week for one year beyond the requirement of 2*a*, the passages to be selected from Cicero's speeches, Vergil, and Ovid's Metamorphoses, or from other prose and verse of no greater difficulty.

[In connection with the passages set for translation at sight (2*a* and 2*b*), questions may be asked on ordinary forms, constructions, and idioms, and on prosody, and also questions designed to test the candidate's understanding of the passages set.]

3. A thorough examination on a prescribed portion of Cicero's speeches (for three years, beginning with 1898, the 2d, 3d, and 4th orations against Catiline), directed to testing the candidate's mastery of the forms, constructions, and idioms of the language ; the test to consist in part of writing simple Latin prose, involving the use of such words, constructions, and idioms only as occur in the orations prescribed.

4. The translation into Latin prose of a passage of connected English narrative. The passage set for translation will be based upon some portion of the prose works specified in I, 1, and will be limited to the subject-matter of those works.

The preparatory course, on which the examinations will be based, is defined as follows:

1. The course should include:
   (*a*) Easy reading, included in or following a suitable introductory book, amounting to from 30 to 40 pages*;
   (*b*) Nepos and Cæsar, 90 to 120 pages;
   (*c*) Cicero, the speech on the Manilian Law, the four against Catiline, and either the speech for Archias or the Fourteenth Philippic, with additional speeches at the option of the teacher, 90 to 120 pages in all.
   (*d*) Vergil, Æneid I–VI, with additional selections from Ovid and Vergil at the option of the teacher, 6000 to 8000 verses in all.
2. Throughout the preparatory course pupils should be constantly guided in proper methods of reading and should be trained to read the Latin understandingly, as Latin, before undertaking to render it into idiomatic English. There should also be constant practice in reading aloud, with due expression, and in hearing the language read.
3. After the completion of the introductory lessons, a systematic study of Latin grammar with practice in writing Latin should be maintained throughout the course.

Mathematics:

On and after January 1, 1899, the requirements in mathematics will be as follows:

Arithmetic: No formal examination as a separate requirement.

A knowledge of the metric system and the ability to reckon accurately are to be presupposed.

Algebra: Factors, common divisors and multiples, fractions, equations of the first degree with one or more unknown quantities, involution including the binomial theorem for positive entire exponents, evolution, the doctrine of exponents, radicals and equations involving radicals, quadratic equations of one or two unknown quantities and equations solved like quadratics, ratio and proportion, and putting problems into equations.

The preliminary examination will include and be confined to the following topics: Factors, common divisors and multiples, fractions, equations of the first degree with one or more unknown quantities, evolution, the doctrine of exponents, radicals; the remaining subjects named will be required in the final examination.

Geometry: Plane geometry, including the solution of simple original exercises and numerical problems.

Greek:

1. Grammar. A thorough knowledge of the common forms, idioms, and constructions and of the general grammatical principles of Attic prose Greek, to

* The pages of the more recent Teubner text editions are taken as a standard in this statement.

be tested by an examination on a prescribed portion of Xenophon (for the next five years Xenophon's Anabasis, Books I and II). The test is to consist in part of questions, in part of simple sentences set for translation into Greek; it may include also translation from Greek into English.

2. Attic Prose at Sight. Translation at sight of a passage adapted to the proficiency of those who have read not less than 130 Teubner pages of Attic prose. The candidate is expected to show in his translation accurate knowledge of the forms and structure of the language, and an intelligent comprehension of the whole passage.

3. Homer. Ability to translate a passage from some prescribed portion of the Homeric poems (for the next three years, Iliad, Book I and Book II, vv. 1–493), and to answer questions designed to test the candidate's understanding of the passage, as well as questions upon poetic forms, constructions, and prosody.

4. Homer at Sight. Ability to translate at sight a passage of ordinary difficulty from the Iliad or Odyssey, with the aid of a vocabulary of the less usual words.

5. Composition. Ability to translate into Attic prose a passage of connected English narrative, employing the more common words and constructions of some prescribed text. (For the next five years a candidate will be allowed his choice between a passage based on Xenophon's Anabasis, Books I and II, and a passage based on Xenophon's Cyropædia, Book I, Chaps. I to V, inclusive.)

NOTE.—Throughout the preparatory course pupils should be constantly guided in proper methods of reading and should be trained to read the Greek understandingly, as Greek, before attempting to render it into idiomatic English. There should also be constant practice in reading aloud, with due expression, and in hearing the language read.

French:

(1) The translation at sight of ordinary nineteenth-century prose.

It is important that the passages set be rendered into clear and idiomatic English. It is believed that the power of translating at sight ordinary nineteenth-century prose can be acquired by reading not less than four hundred duodecimo pages from the works of at least three different authors. Not more than one half of this amount ought to be from works of fiction. This number of pages is to include not only prepared work, but all sight reading done in class.

(2) The translation from English into French of sentences or of a short connected passage to test the candidate's familiarity with elementary grammar.

Elementary grammar is understood to include the conjugations of regular verbs, of the more frequent irregular verbs, such as aller, envoyer, tenir, pouvoir, voir, vouloir, dire, savoir, faire, and those belonging to the classes represented by ouvrir, dormir, connaitre, conduire, and craindre; the forms and positions of personal pronouns, the uses of other pronouns and of possessive, demonstrative, and interrogative adjectives; the inflection of nouns and adjectives for gender and number, except rare cases; the uses of articles, and the partitive constructions.

NOTE.—Pronunciation should be carefully taught and pupils be trained to some extent to hear and understand spoken French. The writing of French from dictation is recommended as a useful exercise.

German :

(1) The rudiments of grammar, and especially these topics: the declension of articles, adjectives, pronouns, and such nouns as are readily classified; the conjugation of weak and of the more usual strong verbs; the commoner prepositions; the simpler uses of the modal auxiliaries; the elementary rules of syntax and word order. The proficiency of the applicant will be tested by questions on the above topics and by the translation into German of simple English sentences.

(2) Translation at sight of a passage of easy prose containing no rare words. It is believed that the requisite facility can be acquired by reading not less than two hundred duodecimo pages of simple German.

NOTE.—Practice in pronunciation, in writing German from dictation, and in the use of simple German phrases in the class-room is recommended.

11a. An applicant duly enrolled, who has filed the required certificate from his principal teacher, may, at the time appointed for the examination in May or June of the year preceding his admission into the Freshman class, but not in September or October, be examined on certain portions of the foregoing subjects. Such an applicant may offer at the preliminary examination the following:

English : Subject 1.
Latin : Subject 3 and, if desired, either 4 or 5.*
Mathematics : Subject 8 and, if desired, 9.
Candidates who propose to enter without Greek may offer in addition, at the preliminary examination, if desired, subject 10.
Greek : Subject 11 and, if desired, 12.*
French.
German.
After such preliminary examination, applicants will not be allowed to finish their examination on the requirements for admission until the entrance examination of the following year, without the written approval of the Dean to be obtained during the month of June.

12. Properly qualified students are advised to present themselves, in June or September, for examination in any of the prescribed studies of the Freshman year, *i. e.*, Latin A or B, Greek B, Mathematics A, Rhetoric A, French A, or German A. Students passing a satisfactory examination in any of these courses will be permitted to elect in its place any higher course in the department for which the prescribed course is the only prerequisite. For the ground covered by advanced entrance examinations in all subjects, candidates are referred to the departmental statements, or to the heads of the respective departments.

* At the preliminary examination the candidate will be tested, but not passed, in Latin and Greek grammar. Under the new requirements for admission candidates may offer at the preliminary examination in Greek, subjects 1 and 2; in Latin, subjects 1, 2*a*, 3.

13. Except for reasons of weight, the results of an entrance examination, entire or partial, will not be allowed to stand to the credit of a candidate for a longer period than sixteen months.

14. The Committee of the Faculty on Entrance Examinations will decide, and report to the Dean, within twelve days after the conclusion of the examination, the names of candidates that have been admitted, of those admitted conditionally, and of those that have been rejected.

15. Students admitted conditionally to the Freshman class at the beginning of the academic year, will be held under probation till the end of the first half-year.

Not later than Tuesday of the second week following the Christmas holidays, the head of each department, in which students with entrance conditions attend, will make to the Dean a special report of progress in the case of each conditioned student. The Dean will lay these reports before the Committee on Entrance Examinations, and that Committee, in conjunction with the Dean, will, as soon as practicable and before the end of the half-year, decide as to each conditioned student, whether he shall be dropped from the roll of the College or have his period of probation extended.

16. No student will be admitted to the Sophomore class until he shall have satisfied all his entrance conditions.

17. Candidates for admission from other colleges, and those desiring to be admitted to advanced standing on examination, must make application in writing to the Dean.

18. No applicant will be allowed to enter the Senior class as a candidate for the degree of Bachelor of Arts after October 15 in any year.

19. The following are the regulations for the admission of students from other colleges:

1. Each applicant, if he comes from a college that gives a satisfactory classical and mathematical course, may be admitted, on the proper certificate of the college that he leaves, to the second term of the Freshman class, or to the Sophomore class, or to the first term of the Junior class.
2. Each applicant for admission to the second term of the Junior class, or to the Senior class, if he comes from a college that gives a satisfactory classical and mathematical course, may be admitted on satisfying the professor of each department in which he wishes to study, by examination or otherwise, that he is competent to pursue the course that he wishes to undertake.
3. Each applicant may be allowed to pursue his studies in each department with the most advanced class that he is found competent to enter, it being understood that, before applying for the A.B. degree, he shall bring all his studies up to the point demanded for that degree.

20. All students are required to present themselves at the office of the Dean for registration on the Wednesday, Thursday, Friday, or Saturday of the week preceding the first Monday in October of each year. Enrolment at a later date is permitted only to those who obtain the consent of the Dean, good cause for the delay having been shown. The presence of all students is required on the day immediately following the close of all vacations and recesses.

21. After filling in the blank provided for the purpose by the Dean, they must present the same, with the proper fee, to the Bursar, who will issue a receipt, without which they will be admitted to no academic exercise.

22. Every student holding a scholarship or receiving the benefit of free or reduced tuition must obtain from the Dean a certificate to that effect.

Fees

(Paragraphs **23–30.** See page 17).

Scholarships

(Paragraphs **31–39.** See page 24).

Examinations in Course

40. Two examinations of all the classes are held every year, one commencing on the last Monday in January, and the other on the Monday of the third week preceding Commencement. The former is called the mid-year examination; the latter the final examination. Any department may omit the mid-year examination in some or all of its courses for Seniors, notice of such intended omission to be sent to the Dean on or before December 1 preceding. It is the privilege of any department to announce that, in some or all of its courses, the results of the mid-year examination will be tentative only, the grades given after the final examination applying to the whole year.

41. Any student who shall have been absent from more than ten per cent. of the exercises in any course during a single term, shall not be entitled to examination in that course.

42. Every student is expected and required to keep an account of his absences, and, should he exceed the limit allowed in any course, he must present to the Dean, during the week preceding the stated examination, satisfactory explanation of all his absences, or be debarred from the examination.

43. (*a*) A student absent from a mid-year or final examination in any course will be accounted deficient in that course.

(*b*) A student reported, at the close of the year, in grade F (45) in more than one course, or in grade F in one course and in grade D in more than two other courses, will be dropped from the roll of his class.

(*c*) A student dropped from the roll of his class will not be permitted to attend any of the exercises of the said class without the consent of the Dean, given for reasons of weight; but he may enter the next succeeding class and pursue the course or courses in which his deficiency exists, or, in case of elective courses and with the consent of the Dean, other course or courses equivalent

thereto in time, and present himself for examination in such course or courses with that class. Upon failing with that class, in any repeated or substituted course, his name will be dropped from the roll of the College. No student dropped from the roll of his class or of the College under the provisions of this section, will be accepted as a special student.

(*d*) No student will be promoted to the Junior class who is deficient in any course of the Freshman class; and no student will be promoted to the Senior class who is deficient in any course of the Sophomore class.

44. Examinations to enable deficient or debarred students to make good their deficiencies are held within the two weeks immediately preceding the opening of the College in October; and, for members of the Senior class only, during the first week in May.

Proficiency and Deficiency

45. At the close of every term, and after the stated examination has been held, each officer of instruction will report to the Dean a list of all the students in his several courses, classifying them in five grades, namely, A, B, C, D, F, according as their work in the course has been excellent, good, fair, poor, or a failure. Each student's record, up to his Senior year, will be transmitted to his parent or guardian by the Dean at the close of each term.

46. Students reported in grade F in any course will be deemed deficient in that course, and required to pass another examination in it at the time fixed for the special examination for debarred and deficient students, unless, for reasons of weight, the Dean shall otherwise direct. (See 44.)

47. Students reported in grade D in any course must be warned by the instructor in charge thereof that their work is so unsatisfactory that, unless improved, it may result in their being found deficient at the close of the next term.

48. Students reported in grade D in two or more courses will be warned by the Dean that their record is not satisfactory, and that, unless improved, it may be found necessary to require them to take the courses a second time or to substitute other courses.

49. A student reported in grade D in four or more courses at the close of the year, and not reported in grade A or B in any course, or a student reported in grade F in one course and in grade D in two other courses, will not be permitted to go on with his class without the consent of the Dean, given for reasons of weight, nor will he be accepted as a special student; but he may enter the next succeeding class.

50. (*a*) No scholarship, prize, or other honor will be awarded in any course or department to any student who is reported in a grade below C in any other course or department during the year in which he is a candidate for such scholarship, prize, or honor.

(*b*) Each student to whom honors may be awarded in any department will receive, immediately after Commencement, a certificate of such award, under the seal of the College and bearing the signatures of the President and the Dean.

Honors

51. Honors are awarded at the end of the second year, the end of the third year, and at the end of the course, and are known respectively as Sophomore Honors, Junior Honors, and Final Honors.

Sophomore Honors are awarded in classics, Germanic languages and literatures, Romance languages and literatures, English, rhetoric and English composition, and mathematics.

Junior Honors are awarded in classics, Germanic languages and literatures, Romance languages and literatures, English, rhetoric and English composition, literature, mathematics, physics and chemistry, and in history.

Final Honors are awarded in classics, Germanic languages and literatures, Romance languages and literatures, English, rhetoric and English composition, literature, mathematics, physics and chemistry, biology and botany, history, political economy, and in philosophy. For particulars, paragraphs **52-57**, see special announcement of the College.

Prizes

58. (Paragraphs **58-61**—see page 24.)

Graduation Theses

62. Each candidate for graduation shall, on or before the 15th of December, with the approval of the instructor in charge of one of the courses in which he has studied, or is studying, select for thesis, or essay, some subject connected with that course, and he shall, under such guidance and with such help as the instructor may deem it right to give him, complete the thesis, or essay, and submit it to the Dean on or before April 2d of each year. This thesis, or essay, shall be judged by the head of the department in which the chosen subject lies; and the judgment shall be passed upon the merit of the thesis, or essay, both in its substance and in its style, and shall be reported in writing by the head of the department to the Dean. In his return to the Dean upon a graduation thesis, the examining officer shall report:

1. A grade as to substance (45);
2. A grade as to style;
3. A judgment upon its merits as a whole.

Each thesis shall contain, as appendix, a list of authorities that have been used. It shall contain at least (2000) two thousand words, unless there be special reasons for the reduced length; and it shall be retained as the property of the College, in charge of the librarian.

If any student fail to comply with these requirements, or if his thesis, or essay, be rejected, he shall not be recommended to the Trustees for graduation.

The graduating theses must be written on firm, strong paper, eleven by eight and one half inches in dimensions, and a space of one and one half inches on the inner margin must be left free from writing.

Honorable Dismission

63. An honorable discharge shall always be granted to any student in good standing who may desire to withdraw from the College; but no student under the age of twenty-one years shall be entitled to a discharge without the assent of his parent or guardian, given in writing to the President.

64. Students are requested, in case of withdrawal from the University during the academic year, to file a notice thereof at the office of the Bursar, who will on application provide the blank form for this purpose.

Public Worship

65. (Paragraph 65—see page 33).

Academic Calendar

66. (Paragraphs 66-68—see Index.)

COURSE OF STUDY

69. The attention of students is called to the following regulations relating to the selection of studies and to the requirements for the degree of Bachelor of Arts.

70. Students are required to give notice to the Dean, upon blanks to be procured at his office, of their choice of elective courses, on or before May 20. Students just entering must give notice at the time of registration. They must avoid conflicts of courses at the same hour. Students are advised to make their choice upon a settled plan, consistent with their aims in education, and especially to consult with their instructors in the courses chosen.

71. The Dean and the head of the department concerned may permit any study prescribed for the degree of Bachelor of Arts to be taken as an elective in an earlier year than that for which it is set down below.

72. One approved course, covering a year, in a natural science including laboratory work, must be taken by every candidate for the degree either before entrance or while in College. The entrance requirement in natural science satisfies this condition. Laboratory hours are counted for one half the number of hours actually occupied.

73. Changes in elective courses can be made only by permission of the Dean. The like permission is necessary to entitle a student to take more than four hours of work, not including laboratory work or drawing, on the same day, and to take more than six hours of work weekly in any department.

74. Elective courses are offered subject to withdrawal if elected by fewer than three students.

75. GROUP I—*Students entering on Greek and French*

Freshman Year

Prescribed (12 hours):	Latin A or B, or Greek B
	German A
	Mathematics A
	Rhetoric A
Elective (3 hours):	French I
	History I
	Either Latin A or B or Greek B,—*i.e.*, Latin, if the student has taken Greek as his prescribed ancient language, or *vice versa*
	Chemistry I
	Physics I

Sophomore Year

Prescribed (7 hours):	History A
	Rhetoric B
	One of the following: Botany I, Chemistry I, III, IV, Physics I, II, Zoölogy II
Elective (9 hours):	A Sophomore may take courses designated as open to him in the departmental statements below

76. GROUP II—*Students entering on Greek and German*

Freshman Year

Prescribed (12 hours):	As in Group I, except that French A is substituted for German A
Elective (3 hours):	As in Group I, except that German I is substituted for French I

Sophomore Year

Prescribed (7 hours):	As in Group I
Elective (9 hours):	As in Group I

77. GROUP III—*Students entering on advanced mathematics, natural science, French and German*

Freshman Year

Prescribed (6 hours):	Latin A or B
	Rhetoric A *
Elective (9 hours):	As in Group I, with the substitution of Greek A for Greek B, and with the addition of Chemistry III, IV, German I, Mathematics I, II, Mechanical Engineering I, and Physics II

Sophomore Year

Prescribed (4 hours):	History A
	Rhetoric B
Elective (12 hours):	As in Group I

* Rhetoric A for this class of students will be a five-hour course counting as three hours unless the student elects Greek A.

ALL GROUPS

Junior Year

Prescribed (3 hours): Philosophy A (first half-year); Political Economy A (second half-year); Rhetoric C.

Elective (12 hours): A Junior may elect courses designated as open to him in the departmental statements below

78. *Senior Year*

A Senior is required to take fifteen hours a week of elective courses, and may elect courses designated as open to him in the departmental statements. If he became a student in the College not later than the beginning of his Junior year, the first-year courses in the College of Physicians and Surgeons, the School of Law, and the Schools of Applied Science are open to him, and he may, should he so desire, prepare himself for advanced standing in such schools by electing the first-year course in the school selected, in whole or in part, and counting it for the degree of Bachelor of Arts; he may also take subjects of the second year in the Schools of Applied Science, for which he may be qualified.

By a judicious arrangement of his course, a student may qualify himself to enter the second year in the College of Physicians and Surgeons or the School of Law, or the third year in one of the Schools of Applied Science, at the completion of his collegiate course for the degree of Bachelor of Arts.

To students who have taken the courses noted as prerequisites, elective courses are open in the following numbers, details of which will be found in the departmental statements of this catalogue and in the special announcement of the College:

79. To Sophomores:

Astronomy.....Three courses
Botany.....One course
Chemistry.....Five courses
Civil Engineering.....One course
English Language and Literature.....Two courses
Geology.....Two courses
German.....Four courses
Greek.....Two courses
History.....Three courses
Latin.....Two courses
Mathematics.....Three courses
Mechanical Engineering..One course
Mechanics.....Two courses
Mineralogy.....Four courses
Physics.....Four courses
Rhetoric and English Composition.....One course
Romance Languages:
French.....Two courses
Italian.....Two courses
Spanish.....Two courses
Zoölogy.....One course

80. To Juniors:

Architecture.....Two courses
Astronomy.....Three courses
Botany.....Five courses
Chemistry.....Eight courses
Civil Engineering.....One course
Electrical Engineering....One course
English Language and Literature.....Five courses
Geology.....Four courses
German.....Seven courses
Greek.....Seven courses
History.....Five courses
Indo-Iranian.....One course
Language, introduction to study of.....One course
Latin.....Four courses
Mathematics.....Three courses
Mechanical Engineering.Two courses
Mechanics.....Two courses
Mineralogy.....Six courses
Philosophy.....One course
Physics.....Ten courses
Political Economy.....Two courses
Psychology.....One course
Rhetoric and English Composition.....Four courses
Romance Languages:
French.....Three courses
Italian.....Three courses
Spanish.....Two courses
Semitic Languages.....Eight courses
Zoölogy.....Two courses

81. To Seniors:

Anthropology.....Three courses
Architecture.....Four courses
Astronomy.....Three courses
Botany.....Eight courses
Chemistry.....Ten courses
Civil Engineering.....Four courses
Electrical Engineering....One course
English Language and Literature.....Five courses
Geology.....Four courses
Germanic Languages:
German.....Nine courses
Germanic Philology....One course
Gothic.....One course
Scandinavian.....Two courses
Greek.....Nine courses
History.....Ten courses
Indo-Iranian.....Three courses
Language, introduction to study of.....One course
Latin.....Eight courses
Literature.....Two courses
Mathematics.....Six courses
Mechanical Engineering.Two courses
Mechanics.....Four courses
Mineralogy.....Six courses
Music.....Three courses
Philosophy, Psychology, and Education:
Philosophy.....Six courses
Psychology.....Six courses
Education.....Two courses
Physics.....Fourteen courses
Political Economy.....Three courses
Rhetoric and English Composition.....Five courses
Romance Languages:
French.....Ten courses
Italian.....Four courses
Spanish.....Three courses
Romance Philology.....One course
Semitic Languages.....Ten courses
Zöology.....Four courses

For any further information the special announcement of the College may be consulted.

REGISTER OF STUDENTS

SENIOR CLASS

Aisberg, Julius.....New York
Anderson, Ellery Oswald.....New York
Averill, Morton Knight.....New York
Bulkley, Lucius Constant.....New York
Burke, Charles Clinton, Jr.....Plainfield, N. J.
Comstock, William Williams.....New York
Cook, Harry Randel.....Orange, N. J.
Curry, Frank Holmes.....New Brighton, N. Y.
Davenport, Ernest Warren.....New Milford, Pa.
Demarest, John Woodbridge.....Queens, N. Y.
Depew, Frank.....New York
De Young, Arthur Bull.....New York
Dresser, Frank Griggs.....Southbridge, Mass.
Edwards, Charles Hebard.....Greenwich, Conn.
Einstein, Lewis David.....New York
Ferry, Dexter Mason, Jr.....Detroit, Mich.
Haas, Harry Louis.....New York
Iglehart, Edwin Taylor.....Brooklyn
Iselin, Ernest.....New York
Jacobus, George Richard.....Yonkers, N. Y.
Keppel, Frederick Paul.....New York
Lee, Arthur.....Brooklyn
Lemcke, Ernst Gustav.....Long Island City, N. Y.
Lester, Maxwell.....Brooklyn
Mitchell, John Fulton Berrien, Jr.....Flushing, N. Y.
Morrow, Albert Sydney.....New York
Morse, Robert King.....Nyack, N. Y.
Parks, John Waring.....New York
Parr, Ferdinand Van Siclen.....Brooklyn
Pomeroy, Ralph Brouwer.....Nyack-on-Hudson, N. Y.
Pretzfeld, Charles Joseph.....New York
Randall, Henry Thomas.....East Orange, N. J.
Randolph, Lothrop.....Mt. St. Vincent, N. Y.
Roberts, Gerard.....Brooklyn
Sandy, William Charles, Jr.....Newark, N. J.
Schlussel, Jacob Smith.....New York

Schwarz, Arthur Harold.....New York
Solomon, Joseph Barnard.....New York
Stern, Nathan.....New York
Stern, Randall Hoyt.....New York
Symmes, William Bittle, Jr.....New York
Tenney, Alvan Alonzo.....Brooklyn
Vinton, Stallo.....New Rochelle, N.Y.
Vogel, Martin Heyman.....New York
Watson, Jesse.....Brooklyn
Westerfield, William Rogers.....New York
Worthen, Samuel Copp.....Corinna, Maine
Zeiger, Franklin.....Montclair, N. J.

Senior Class.....48

JUNIOR CLASS

Acken, George Alonzo.....Haworth, N. J.
Baker, Charles Adkins.....New York
Birckhead, Hugh McCulloh.....New York
Bowman, Harold Horsford.....Montclair, N. J.
Bradley, William Aspenwall.....New York
Bross, William Warren.....Montclair, N. J.
Cardozo, Ernest Abraham.....New York
Cole, Robert Germain.....Passaic, N. J.
Corning, William Butler.....Palmyra, N. Y.
Deane, Sumner.....New York
Denzer, Sydney Weilman.....New York
Eldert, Henry Cameron.....Brooklyn
Ernst, Bernard Morris Leon.....New York
Fletcher, Norton De Los Lull.....New York
Fort, George Phelps.....Brooklyn
Fowler, Arthur Alexander.....New York
Giffin, Irving.....Orange, N. J.
Graves, Horace Cutler.....Brooklyn
Harrington, Howard Sawyer.....Jersey City Heights, N. J.
Harrison, John Smith.....Orange, N. J.
Hellman, George Sidney.....New York
Hinck, Otto Helmuth.....Montclair, N. J.
Hinrichs, Frederic William, Jr.....Brooklyn
Hopkins, George Gallagher, Jr.....Brooklyn
Hudson, Darwin Shaw.....Astoria, N. Y.
Josephthal, Sidney Louis.....New York
Lesem, William Wolfe.....New York
Lichtenstein, Oscar Richard.....Brooklyn
Marcus, John.....Jersey City, N. J.
Miller, Henry Augustus.....Portland, Ore.
Mitchel, John Purroy.....New York
Moffatt, Miles Rees.....Mamaroneck, N. Y.

Moran, Charles.....New York
Morris, Stuyvesant Fish, Jr.....New York
Mosenthal, Herman Otto.....New York
Parsons, Geoffrey.....Hempstead, N. Y.
Parsons, Theophilus.....Hempstead, N. Y.
Pell, James Duane.....New York
Pierrepont, Robert Low.....Brooklyn
Ropes, Ernest Chapin.....Brooklyn
Schley, James Montfort, Jr.....New York
Schuyler, Montgomery, Jr.....New York
Senftner, Alexis Eugene.....New York
Seward, Frederic Kimber.....New York
Sherer, Prescott Alfriend.....Hempstead, N. Y.
Simpson, Richard Gordon.....Plainfield, N. J.
Smith, Davidson Heermance.....New York
Staunton, Henry Capen.....New York
Tuttle, Charles Henry.....New York
VanName, Warren Mesereau.....Tottenville, N. Y.
Wagner, Webster.....Brooklyn
Weaver, William Minter, Jr.....New York
Wilson, Jonathan Dunham, Jr.....Newburgh, N. Y.
Wormser, Moritz.....New York
Zinsser, Hans William.....New York

Junior Class.....55

SOPHOMORE CLASS

Alsberg, Henry Garfield.....New York
Beal, Gifford Reynolds.....New York
Bingham, Lee Mansfield.....New York
Bogue, Morton Griswold.....Brooklyn
Bowman, James Floyd.....Montclair, N. J.
Boyesen, Hjalmar Hjorth.....Southampton, N. Y.
Brooks, Roelif Hasbrouck.....Poughkeepsie, N. Y.
Cane, Melville Henry.....New York
Catlin, George de Grasse.....Brooklyn
Clark, Harrison, Jr.....New York
Coan, Philip Munson.....New York
Coffee, Rudolph Isaac.....Oakland, Cal.
Cohn, Alfred Einstein.....New York
De Witt, William Archelaus.....New York
Dixon, Sidney Harry.....Westchester, N. Y.
Dixon, William Henry.....New York
Duden, William.....Bronxville, N. Y.
Duffield, Roy Farrell.....Quincy, Mass.
Edwards, James Alexander.....New York
Elmer, Charles Howard.....New York
Erskine, John.....Weehawken, N. J.

Fackenthal, Joseph Diehl.....Brooklyn
Finnigan, James Joseph.....New York
Fiske, William Mead Lindsley, Jr.....Brooklyn
France, Melville Jefferson.....Brooklyn
Gallatin, Goelet.....New York
Gardiner, Philip Parkhurst.....Garden City, N. Y.
Giddings, Henry Starr.....New York
Gould, John Wesley.....Brooklyn
Grannis, Pierrepont Edwards.....East Orange, N. J.
Gregory, William King.....New York
Hackett, Frank Sutliff.....New York
Harrison, Henry Sydnor.....Brooklyn
Hawks, Everett Merl.....Tarrytown, N. Y.
Hoffman, Irving Morehouse.....Mt. Vernon, N. Y.
Hollaway, John Moseley.....Geneva, Ala.
Howe, Joseph Parkhurst.....New York
Hull, Robert Chipman.....Brooklyn
Irving, Pierre Frederick.....New Brighton, N. Y.
Johnson, John Barent.....Middletown, Conn.
Jones, Frederick Vincent.....New York
Kellock, Harold Anderson.....New York
Kidde, Frank.....Montclair, N. J.
Knapp, James Rintoul.....New York
Krickl, Maurice.....New York
Leale, Loyal.....New York
Lesinsky, Leo.....New York
Lilly, Frederic Ferdinand.....Mt. Vernon, N. Y.
Lowenstein, Oscar.....New York
Lum, Ralph Emerson.....Chatham, N. J.
McCann, John Franklin, Jr.....Brooklyn
McKenna, James John, Jr.....New York
Maxwell, William Henry, Jr.....Brooklyn
Meeker, Arthur Youle.....Glen Ridge, N. J.
Mehler, Albert Joseph.....New York
Mitchell, Harry Brainerd.....Brooklyn
Montgomery, Henry Eglinton.....Flushing, N. Y.
Moore, William Underhill.....New York
Muirheid, John.....South Amboy, N. J.
Nelson, Giffard Arthur.....Brooklyn
Neugroschl, Abraham.....New York
Newborg, Leo David.....New York
Norman, Mark Wilber.....Darien, Conn.
O'Brien, Thomas Edward.....Brooklyn
O'Connor, Eugene Franklin, Jr.....Brooklyn
O'Connor, Francis J.....Elmira, N. Y.
Ogden, Charles Jones.....New York
Parker, Gordon.....Brooklyn

Pollard, David Henry.....Winnipauk, Conn.
Quackenbos, George Payn.....New York
Raymond, Edward Holman, Jr.....Summit, N. J.
Rider, Chester Crosby.....Brookfield, Mo.
Rochester, Haydon.....Brooklyn
Rosenberg, Daniel Davis.....Brooklyn
St. Clair, Harry Hull, Jr.....New York
Schafer, Algernon Sidney.....New York
Schlussel, Walter Sylvan.....New York
Seguine, Edward Murray.....Southfield, N. Y.
Siegel, Harold Lawrence,.....Salt Lake City, Utah
Slade, Harvey Shattuck.....Yonkers, N. Y.
Smith, Alexander Godfrey.....Brooklyn
Stevens, Theodosius Fowler.....Hoboken, N. J.
Stoddart, Charles William.....Yonkers, N. Y.
Strunsky, Simeon.....New York
Turner, Wallis Smythe.....New York
Walter, Edwin Joseph.....New York
Ward, Sylvester L'Hommedieu, Jr.....White Plains, N. Y.
Weinstein, Mayer.....New York
Williams, John Nelson.....Bedford, N. Y.
Wortmann, Martin.....New York

Sophomore Class.....90

FRESHMAN CLASS

Anderson, Rupert Wentworth Kelsell.....Salisbury, Conn.
Armstrong, David.....Rahway, N. J.
Baker, Edward Wood.....New York
Barker, Stephen.....New York
Baxter, Frank Edward.....Point Pleasant, N. J.
Beck, Erich Carl.....New York
Bensel, William Aitken.....New York
Block, Alexander Long.....New York
Boehm, August Abraham.....New York
Boese, William Henry.....Poughkeepsie, N. Y.
Bonsall, Victor Fitch Mount.....New York
Boone, Elliott Williams.....New York
Bradshaw, Percy Haight.....Orange, N. J.
Brower, Farrand Dodd.....New York
Brueninghausen, Herbert Washington.....Brooklyn
Bühler, Joseph Stettenheim.....Columbus, Ga.
Bulkley, Henry Duncan.....New York
Bullard, Frederic Lewis.....New York
Cardoza, Michael Hart, Jr.....New York
Carman, Travers Denton.....River Edge, N. J.
Coykendall, Robert Bayard.....Rondout, N. Y.

Curran, Ross Ambler.....New York
De Beaumont, Victor Ernest.....New York
DeKay, William.....New York
Delgado, Frederick Pearce.....New York
Dillenback, George Perry.....New York
Donnellan, George Lawrence.....New York
Duden, Herman.....Yonkers, N. Y.
Durham, Knowlton.....Brooklyn
Eastmond, Charles.....Brooklyn
Edwards, Elisha Jay, Jr.....Greenwich, Conn.
Elliman, Kenneth Benbow.....Flushing, N. Y.
Esser, Joseph Henry.....Mt. Vernon, N. Y.
Evans, Morgan David.....New York
Falconer, Bruce McLean.....New York
Forbes, Charles Savage.....New York
Forsch, Albert.....New York
Frank, Milton L.....New York
Fuller, Paul, Jr.....Wyckoff, N. J.
Furnald, Royal Blackler.....New York
Gallatin, Frederic, Jr.....New York
Gallatin, James Nicholson.....New York
Geiger, Frederic Clarence.....East Orange, N. J.
Gilsey, Gardner Ladd.....Good Ground, N. Y.
Goff, John William, Jr.....New York
Grace, Walter Henry.....Great Neck, N. Y.
Grant, Henry Roderick.....Short Hills, N. J.
Gray, James.....Brooklyn
Halsey, Francis Reboul.....Astoria, N. Y.
Hanson, Hans Olaf.....New York
Hasbrouck, Harold.....New York
Haydock, Charles Edward.....New York
Heimann, Walter James.....New York
Heuser, Frederick William Justus.....Brooklyn
Hogan, Richard.....New York
Jackson, John Gillespie.....Middletown, Conn.
Jacocks, Harold Huntington.....New York
Josephson, Walter Stokes.....Brooklyn
Kidder, Scott.....Ridgefield Park, N. J.
Kohn, Achilles Herrman.....New York
Kress, George William Bache.....New York
Lederer, Allison Michael.....Ridgewood, N. J.
Lemcke, George Roland.....Astoria, N. Y.
Lorenz, Karl Kumler.....Dayton, O.
MacKay, Joseph Wild.....Bay Ridge, N. Y.
McKeon, Peter Joseph.....New York
Mapes, Clive Spencer.....New York
Mattice, Harold Allison.....Westchester, N. Y.

Mesick, Frank Seaich.....New York
Meyer, Arthur Simon.....New York
Meyer, Rutherford Bircherd.....New York
Mitchell, Edward Bedinger.....Flushing, N. Y.
Moore, James Bly.....Nanuet, N. Y.
Mortimer, Laurence.....New York
Mosenthal, Walter Joseph.....New York
Nash, Stephen Payn, Jr.....New York
Palmer, Archie Wheeler.....East Orange, N. J.
Palmer, Richard Henry.....Ridgewood, N. J.
Pegram, Robert Bruce.....New York
Platt, Stanley Burr.....Bay Shore, N. Y.
Prince, Henry Starr.....Brooklyn
Proctor, David Gould.....New York
Quinn, William Robert.....Brooklyn
Raiman, Robert Insall.....Brooklyn
Rich, Walter Henry.....Atlanta, Ga.
Ringer, Paul Henry.....New York
Roberts, Edwin John.....Garden City, N. Y.
St. George, Albert Harrington.....New York
Scarlett, Albert Edward.....Mt. Vernon, N. Y.
Senftner, Alfred Dwight.....New York
Shepard, Woolsey Adams.....New York
Silbiger, Samuel.....New York
Small, Herbert Fedor.....New York
Smith, John Boyce, Jr.....New York
Southack, John William.....Morristown, N. J.
Spiro, Walter.....New York
Stevenson, Maxwell.....New York
Van Cise, William Marsh.....Summit, N. J.
Walbridge, George Huntington.....Brooklyn
Ward, Egbert.....White Plains, N. Y.
Weeks, Charles LeMoyne.....New York
West, Ernest Fernando.....Garnerville, N. Y.
White, Robert Hooper.....Astoria, N. Y.
Whittaker, Thomas Shirley.....New York
Willis, Reginald Satterlee.....New York
Wilson, Hugh Dempster, Jr.....New York
Wise, Harry Morris.....New York

Freshman Class.....107

SPECIAL STUDENTS

Assenheimer, Edward Minturn.....New York
Barron, Thomas Henry.....New York
Bird, Harrison Kerr.....New Windsor, N. Y.
Bruce, Edward Bright.....Yonkers, N. Y.

Butler, Charles Amoss.....Huntington, Ind.
Caldwell, Amour.....Bay Ridge, N. Y.
Davis, Michael Marks, Jr.....New York
Dunning, Howard.....Cedarhurst, N. Y.
Ehret, George, Jr.....New York
Enteen, Joel.....New York
Gouveneuer, Warburton.....New York
Hoadley, Harwood.....New York
Johnson, Bradish Gaillard.....New York
Kellogg, Walter Guest.....Ogdensburg, N. Y.
Lamson, Harrison Gray.....Bridgeport, Conn.
Livingston, Louis, Jr.....Islip, N. Y.
Matthew, George.....St. Johns, N. B., Can.
Maverick, William Chilton.....San Antonio, Texas
Morgan, William Millerd.....New York
Mulligan, Cadwallader Roberts, Jr. .....Dover, N. J.
Packard, Ralph Gooding, Jr.....Brooklyn
Shoemaker, Henry Waterman.....New York
Simons, Frederick Carmoreau.....New York
Weil, Henry Lehman.....New York
White, Stewart Edward.....Grand Rapids, Mich.
White, Thomas Gilbert.....Grand Rapids, Mich.

Special Students.....26

UNIVERSITY STUDENTS TAKING ONE COURSE OR MORE IN THE COLLEGE

From the School of Engineering.....1

Total.....1

SUMMARY

Senior Class	48
Junior Class	55
Sophomore Class	90
Freshman Class	107
Special Students	26
Students primarily registered under this faculty	326
Students from other faculties of the University	1
Total	327

SCHOOL OF LAW

Officers of the Faculty

WILLIAM A. KEENER, LL.D.....*Dean, and Ex-Officio Member of the University Council*
GEORGE W. KIRCHWEY, A.B.....*Secretary*
FRANCIS M. BURDICK, LL.D.....*Elected Delegate to the University Council*

The Faculty

SETH LOW, LL.D., *President*

WILLIAM A. KEENER, LL.D., *Kent Professor of Law, and Dean*
FRANCIS M. BURDICK, LL.D., *Dwight Professor of Law*
GEORGE W. KIRCHWEY, A.B., *Professor of Law*
GEORGE F. CANFIELD, A.B., LL.B., *Professor of Law*
HENRY W. HARDON, A.M., LL.B., *Professor of Law*

From the Faculty of Political Science

JOHN W. BURGESS, Ph.D., LL.D., *Professor of Political Science and Constitutional Law*
MUNROE SMITH, A.M., J.U.D., *Professor of Roman Law and Comparative Jurisprudence*
FRANK J. GOODNOW, A.M., LL.D., *Professor of Administrative Law*
JOHN B. MOORE, A.B., *Hamilton Fish Professor of International Law and Diplomacy*

Lecturers

HERBERT NOBLE, A.M., LL.B., *Lecturer on Bailments, Domestic Relations, and Insurance.*
CHARLES T. TERRY, A.B., LL.B., *Lecturer on Contracts*

PURPOSES OF THE SCHOOL

The design of the school is to prepare students for practice in any State of the Union, and in furtherance of this object the endeavor is made to give a thorough, practical, and scientific education in the principles of the law included in the following subdivisions :

First.—The COMMON LAW, in its development and as it exists to-day in the United States, together with such statutory modifications as are generally in force in the several States.

Second.—EQUITY, in its development and as it exists to-day in the United States.

Third.—The LAW of the STATE OF NEW YORK, including PRACTICE and PLEADING under the CODE of CIVIL PROCEDURE, and the doctrines of substantive law peculiar to that State in regard to Trusts of Real and Personal Property, Powers, Perpetuities, Charitable Bequests, Accumulations, Limitation of Future Estates, Descent and Distribution, Mortgages and Contracts.

Fourth.—The PUBLIC LAW of the United States, and the Principal EUROPEAN COUNTRIES, including CONSTITUTIONAL LAW, ADMINISTRATIVE LAW, and INTERNATIONAL LAW.

Fifth.—COMPARATIVE JURISPRUDENCE, and ROMAN LAW.

COURSE OF INSTRUCTION

The course of instruction leading to the degree of Bachelor of Laws covers a minimum period of three years, in which there are offered sixty-two hours of instruction a week throughout the year. In the first year are offered fourteen hours of instruction a week; in the second year twenty-three hours of instruction a week; in the third year twenty-five hours of instruction a week.

The degree of Bachelor of Laws is conferred only upon students who have passed satisfactory examinations in courses covering a total of forty-two hours.

To obtain this degree in three years the student must take courses covering fourteen hours a week in each of the three years.

While no student will be allowed, without the consent of the faculty, to present himself for examination in any one year in subjects covering more than the number of hours above named, any one desiring to prolong the period of study for the degree of Bachelor of Laws beyond three years, will be permitted to reduce thereby the amount of work in any one year necessary for the degree. The faculty would strongly advise students who have not had an opportunity of thoroughly studying History, Economics, and Finance, so to prolong their course of study in order that they may avail themselves of the opportunity offered in the School of Political Science for studying these subjects. For the courses offered by the Faculty of Political Science in these subjects see pages 84 and 54.

The work selected by a student for a degree in law is subject in every case to the approval of the Dean.

First Year

ELEMENTS OF JURISPRUDENCE*—2 hours a week. Professor KEENER

EQUITY*—The Origin and Nature of Equity, Bills of Peace, Interpleader, Quia Timet, Removal of Cloud upon Title, the Jurisdiction of Equity over Torts. 2 hours a week. Professor KEENER

* The courses in Jurisprudence and Equity are together the equivalent of two hours a week through the year. The study of Equity is not begun until the completion of the course in Jurisprudence. The instruction in Common Law Pleading and Practice is given from February to June; in Domestic Relations and Law of Persons from October to February. When not otherwise stated, the course of instruction in any given subject extends through the year.

CONTRACTS—4 hours a week. Mr. TERRY

REAL AND PERSONAL PROPERTY—2 hours a week. Professor KIRCHWEY

TORTS—2 hours a week. Professor BURDICK

CRIMINAL LAW AND PROCEDURE—2 hours a week. Professor MOORE

COMMON LAW PLEADING AND PRACTICE*—2 hours a week. Professor HARDON

DOMESTIC RELATIONS AND LAW OF PERSONS*—2 hours a week. Mr. NOBLE

The instruction in Elements of Jurisprudence is based on Keener's Selections on Elements of Jurisprudence. The instruction in Equity is based on Keener's Cases on Equity Jurisdiction. The instruction in Contracts in both the first and second years is confined to the consideration of pure contracts, or the principles involved in the formation, performance, and discharge of contract obligations, and is based in the first year on Keener's Selections on Contracts. The instruction in Real and Personal Property in the first year is based on Digby's History of the Law of Real Property and Gray's Cases on Property; in Criminal Law and Procedure, on Beale's Cases on Criminal Law; in Torts, on Pollock on Torts and Burdick's Cases on Torts; in Common Law Pleading and Practice, on Stephen on Pleading and Ames's Cases on Pleading; in Domestic Relations and Law of Persons, on Woodruff's Cases on Domestic Relations.

Second Year

QUASI-CONTRACTS—2 hours a week. Professor KIRCHWEY

EQUITY—Trusts. 2 hours a week. Professor KEENER

REAL AND PERSONAL PROPERTY—2 hours a week. Professor KIRCHWEY

ADMINISTRATIVE LAW—2 hours a week. Professor GOODNOW

AGENCY—2 hours a week. Professor CANFIELD

BAILMENTS AND CARRIERS—2 hours a week. Mr. NOBLE

COMPARATIVE CONSTITUTIONAL LAW—3 hours a week. Professor BURGESS

INSTITUTES OF ROMAN LAW—2 hours a week. Professor SMITH

NEGOTIABLE PAPER—2 hours a week. Professor BURDICK

SALES OF PERSONAL PROPERTY—2 hours a week. Professor BURDICK

CODE PRACTICE*—2 hours a week. Professor HARDON

EQUITY PLEADING AND PRACTICE†—2 hours a week. Professor HARDON

The course on Quasi-Contracts is based on Keener's Cases on Quasi-Contracts and treats of rights arising independently of either Tort or Contract, as the recovery of money paid under duress, under compulsion of law, or under mistake; waiver of tort; the right to recover independently of contract for services rendered, and the right to recover for benefits conferred under an unenforceable contract. The instruction in Equity is based on Ames's Cases on Trusts. In

* The instruction in Code Practice is given from February to June; in Equity Pleading and Practice from October to February. When not otherwise stated the course of instruction in any given subject extends through the year.

† See note on preceding page.

the course on Administrative Law are considered the organization of administrative authorities; their methods of action, and the control exercised over them by the Legislature and the Courts, particularly through the issue of the writs of mandamus, prohibition, certiorari, habeas corpus, and quo warranto. In the course on Code Practice students are required to prepare the principal papers required in practice under the Code. The course in Equity Pleading and Practice is given with special reference to the Equity Procedure of the Federal Courts of the United States, students being required to prepare the pleadings and other papers incident to a suit in equity. The instruction in Real and Personal Property is based on Gray's Cases on Property; in Agency, on Wambaugh's Cases on Agency; in Bailments and Carriers, on McClain's Cases on Carriers; in Negotiable Paper, on Ames's Cases on Bills and Notes; in Sales, on Burdick's Law of Sales and Burdick's Cases on Sales.

Third Year

CORPORATIONS—2 hours a week. Professor KEENER

EQUITY—The Jurisdiction of Equity over Contracts, including the specific performance, reformation, and rescission thereof; Account, Equitable Conversion. 2 hours a week. Professor KEENER

EVIDENCE—2 hours a week. Professor CANFIELD

INTERNATIONAL LAW—2 hours a week. Professor MOORE

COMPARATIVE JURISPRUDENCE—2 hours a week. Professor SMITH

PARTNERSHIP—2 hours a week. Professor BURDICK

REAL AND PERSONAL PROPERTY—2 hours a week. Professor KIRCHWEY

CODE PLEADING AND PRACTICE—2 hours a week. Professor HARDON

SURETYSHIP AND MORTGAGE—2 hours a week. Professors BURDICK and KIRCHWEY

WILLS AND ADMINISTRATION—2 hours a week. Professor HARDON

INSURANCE*—2 hours a week. Mr. NOBLE

CONFLICT OF PRIVATE LAW—1 hour a week. Professor SMITH

MUNICIPAL CORPORATIONS†—2 hours a week. Professor GOODNOW

LAW OF TAXATION†—2 hours a week. Professor GOODNOW

DOCTRINES PECULIAR TO NEW YORK LAW—1 hour a week. Professor CANFIELD

COURSES IN THE SECOND YEAR NOT OFFERED FOR THE DEGREE DURING THAT YEAR AND OPEN TO THIRD-YEAR STUDENTS AS PART OF THEIR WORK FOR THE DEGREE—9 hours a week

The instruction in Equity is based on Keener's Cases on Equity Jurisdiction. In the course on Code Pleading, students are required to prepare pleadings, and

* The instruction in Insurance is given from February to June. When not otherwise stated, the instruction in any given subject extends through the year.

† The instruction in Municipal Corporations is given from October to February; in the Law of Taxation, from February to June. When not otherwise stated, the instruction in any given subject extends through the year.

the other principal papers necessary under the Code. The instruction in Corporations is based on Cumming's Cases on Private Corporations; in Evidence, on Thayer's Cases on Evidence; in Insurance, on Richards on Insurance; in Partnership, on Ames's Cases on Partnership; in Wills and Administration, on Gray's Cases on Property.

Moot Courts

Moot Courts are held during the academic year, open only to members of the second- and third-year classes.

Courses Recommended to Law Students, though not Accepted for the Degree of LL.B.

CONSTITUTIONAL HISTORY OF THE UNITED STATES—2 hours a week. Professor BURGESS

CONSTITUTIONAL HISTORY OF ENGLAND—2 hours a week. Professor OSGOOD

HISTORICAL AND PRACTICAL POLITICAL ECONOMY—3 hours a week. Professor MAYO-SMITH

TAXATION AND FINANCE—2 hours a week. Professor SELIGMAN

RAILROAD PROBLEMS—2 hours a week, second half-year. Professor SELIGMAN

HISTORY OF POLITICAL THEORIES—2 hours a week. Professor DUNNING

Requirements for Admission

All applicants for admission to the school must be of good moral character, and must be at least eighteen years of age for admission to the work of the first-year class at its formation, and of a corresponding increase of age for admission o advanced standing.

Graduates of colleges and scientific schools in good standing, and all persons who have received the academic diploma of the Regents of the State of New York, or a certificate acceptable to the Regents in lieu thereof, are admitted without examination. Inquiries for information as to Regents' certificates should be addressed to "The University of the State of New York, Examination Department, Albany, New York."

All other applicants, whether candidates for the degree or not, must pass the examination required for admission to the Sophomore class of Columbia College, an equivalent amount of French and German being accepted as a substitute for Latin and Greek.

Advanced Standing

No applicant will be admitted to advanced standing beyond the second year except by special vote of the faculty. Applicants for admission to the second-year class must produce satisfactory evidence of having spent at least one year in some school having a required course of study of three years leading to the degree of LL.B., and must in addition thereto pass satisfactory examinations in the work of the first year.

Applicants for admission to advanced standing will be required to produce

evidence of having been qualified to enter the school at the formation of the class to which they seek admission.

No certificate or diploma will be accepted in lieu of these examinations for advanced standing.

Special Students

Applicants who do not desire to become candidates for a degree may, if qualified to become candidates, pursue a special course of study approved by the Dean. Such students will be classified as special students. No one will be admitted to the school to pursue advanced work as a special student who has not passed satisfactory examinations in the contract, equity, and property courses preceding such work in point of time.

Special students must present themselves for examination in each subject selected by them at the first examination held therein, and must pass satisfactory examinations in a majority of the subjects, as a condition of continuing in the school.

Examinations

Written examinations are held at the end of each year on the subjects of that year, and on the subjects of the first and second years during the week preceding the first Monday in October.

No student is admitted to advanced standing who has failed to pass satisfactory examinations in more than four hours of work per week. Any student failing in the final examinations held at the end of the first and second years may present himself for re-examination during the week preceding the first Monday in October. No student failing a third time in any given subject will be allowed to continue in the school.

No special examinations are given.

Library

Every facility is given to students to make use of the Law Library, containing about 25,000 volumes, and of the general Library, containing about 240,000 volumes.

The library is open for use from 8.30 A.M. to 10 P.M., every secular day in the year except holidays.

Admission to the Bar

An office clerkship is no longer required of applicants for admission to the New York Bar.

While the course of study leading to the degree of LL.B. covers a period of three years, college graduates who have been in regular attendance upon the lectures and exercises of this school for two years after receiving their college degree are entitled to apply for admission to the New York Bar at the end of their second year of study. Students who are not college graduates are entitled to apply for admission to the New York Bar at the end of their third year of regular attendance upon the lectures and exercises of this school.

In New Jersey, eighteen months spent in this school is regarded as the equivalent for a like period of clerkship in a lawyer's office.

For further information address the Dean of the School of Law.

REGISTER OF STUDENTS

THIRD YEAR CLASS

Alexander, Bernard, A.M., *Columbia*.....New York
Andrews, Alexander Speer, A.B., *Princeton*.....Janesville, O.
Ball, Wilbur Laing, A.B., *University of Wisconsin*.....Madison, Wis.
Beard, Anson McCook, A.B., *Yale*.....Poughkeepsie, N. Y.
Bell, Clinton Edward, A.B., *Amherst*.....New York
Bennett, David C., Jr., A.B., *Brooklyn Polytechnic*.....Brooklyn
Brant, Oscar Rutherford.....New York
Brewster, John H., Jr.....Rochester, N. Y.
Burrows, Fred. Rhodes, Ph.B., *Adelbert*.....Cleveland, O.
Byers, Mortimer Wardler.....Brooklyn
Cable, Benjamin Stickney, A.B., *Yale*.....Chicago, Ill.
Carter, Walter Frederick, A.B., *Yale*.....New York
Coffin, Herbert Lawton.....New York
Cohn, David, A.M., *Columbia*.....Paterson, N. J.
Cohn, Maurice, A.M., *Columbia*.....Paterson, N. J.
Cooke, Walter Evans, A.B., *Yale*.....Paterson, N. J.
Cooley, Alford W., A.B., *Harvard*.....Westchester, N. Y.
Cummings, Constantine Stanislaus, A.B., *Christian Brothers*....St. Louis, Mo.
Daly, Edward Hamilton, A.B., *Columbia*.....New York
Davis, David Theodor, A.B., *McGill*.....New York
Day, Schuyler Emerson, A.B., *Columbia*.....New York
Deal, Frank Henry, LL.B., *Union*.....Green Island, N. Y.
Denton, Eugene Willis.....New Hyde Park, N. Y.
Doran, Michael, Jr., A.B., *St. John's, N. Y.*.....St. Paul, Minn.
Eberle, Charles F.....Chatham, N. Y.
Egner, Henry William, Jr., A.B., *Columbia*.....Newark, N. J.
Ehrhorn, Oscar Weeks, A.B., *N. Y. City College*; A.M., *Columbia*..New York
Einbigler, Benjamin Franklin .....New York
Eisner, Jerome, B.S., *N. Y. City College*.....New York
Elliott, Richard Aston.....New York
Elmore, Elmore Franklin, A.B., *Yale*.....Troy, N. Y.
Falk, Harry Louis.....Decatur, Ala.
Farley, Edward James, A.B., *Manhattan*.....New York
Finch, Edward R., A.B., *Yale*.....Plainfield, N. J.
Fleming, Charles Lewis, Jr.....New York
Forsythe, Frederic Wellington, B.L., *Lincoln*.....Lincoln, Ill.

Foster George, Henry D., A.B., *Bowdoin*.....Portland, Me.
Gilbert, Frederic N.....Brooklyn
Goldberg, Bernard.....New York
Goldmark, Herbert, A.B., *Brooklyn Polytechnic*.....Brooklyn
Greene, Ralph C.....Sayville, N. Y.
Hanauer, Sumner, *Gymnasium, Frankfurt a/M*.....New York
Harris, Myron.....Orange, N. J.
Hayes, Alfred, Jr., *Princeton*.....Lewisburg, Pa.
Heindel, Norman Swope.....Gettysburg, Pa.
Hill, George Place.....New York
Hubby, Frank Winfield, Jr., A.B., *Yale*.....Cleveland, O.
Hulick, Francis Rader.....Easton, Pa.
Huse, Robert Selden.....Highland Falls, N. Y.
Johnson, Franklin, Jr., A.B., *University of Chicago*.....Chicago, Ill.
Joseph, Charles.....New York
Kaps, John Daniel.....Portsmouth, O.
Kelly, James Allison.....Nashville, Tenn.
Kennedy, Gilbert Falconer, B.S., *Harvard*.....Rondout, N. Y.
Kirby, Gustavus Town, E.E., *Columbia*.....New York
Krafft, Herman Frederick, A.B., *Johns Hopkins*.....New York
Lehman, Irving, A.M., *Columbia*.....New York
Leonard, Charles Shaw, B.S., *Highland*.....Highland, Kan.
Leslie, Adolph Mitchell.....Odessa, Russia
Livingston, Frederick Montgomery, A.M., *Columbia*.....Brooklyn
Longfellow, Arthur Henry, A.B., *Harvard*.....Boston, Mass.
Loughran, Thomas Vincent, A.B., *Manhattan*.....New York
McConn, Hugh James.....Ft. Madison, Ia.
McLaughlin, Leo Lawrence, A.B., *St. Francis Xavier*.....New York
Minard, Hubert Chambers, A.M., *Syracuse University*.....Buffalo, N. Y.
Obermeier, Leonard J., A.M., *Columbia*.....New York
O'Donnell, William T., A.B., *Brown*.....Bristol, R. I.
Opp, Arthur Wellington.....Brooklyn
Paddock, Porter, B.S., *Blackburn*.....Carlinville, Ill.
Parish, Edward Codman, A.B., *Columbia*.....New York
Pease, Henry Hollister, A.B., *Harvard*.....New York
Prendergast, James William, Jr., A.M., *Mount. St. Mary's, Md.*.....Brooklyn
Ridgway, William Combs.....Jersey City, N. J.
Roberts, Clifford Charles.....New York
Roelker, Alfred, Jr., A.B., *Amherst*.....New York
Rosenberg, James Naumburg, A.B., *Columbia*.....New York
Rowe, Allan C., A.B., *Columbia*.....Brooklyn
Rowe, John C., A.B., *Harvard*.....South Bethlehem, N. Y.
Rubenstein, George.....New York
Sanford, Henry Gansevoort, A.B., *Williams*.....Poughkeepsie, N. Y.
Schafran, Leo, B.S., *N. Y. City College*.....New York
Singerman, Samuel Adams.....New York
Smith, John P., A.B., *N. Y. City College*.....New York

Sporborg, William Dick.....Albany, N. Y.
Stern, Benjamin Horace, Ph.B., *N. Y. University*.....New York
Stone, Harlan Fiske, B.S., *Amherst*.....Amherst, Mass.
Sturges, Ralph Alonzo, A.B., *Bates*.....Lewiston, Me.
Thompson, Jay Linton, A.B., *Harvard*.....New York
Walker, John Edwin.....Tacoma, Wash.
Wendt, Charles Rudolph.....New York
Werdenschlag, Arthur, B.S., *N. Y. City College*.....New York
Wigham, Reginald Effingham.....New York
Wing, Arthur K.....North East, Pa.
Wood, Jeremiah.....Brooklyn

Third Year Class.....94

SECOND YEAR CLASS.

Adams, Alva Blanchard, Ph.B., *Yale*.....Pueblo, Colo.
Arnold, Henry N., A.B., *Harvard*.....New York
Bacon, Ray, A.B., *University of Rochester*.....Port Norris, N. J.
Barcus, James S.....New York
Baxter, Wyllys Pomeroy.....Montclair, N. J.
Bayles, Edwin Atkinson, A.M., *Columbia*.....Orange, N. J.
Beard, William Mossgrove, A.B., *Yale*.....New York
Becker, Louis, Ph.B., *N. Y. University*.....New York
Benedict, Elliot Stuart, A.B., *Harvard*.....New York
Benedict, James Doolittle.....Denver, Colo.
Bigham, Henry John.....New York
Boehm, George Nathan, Ph.B., *N. Y. University*.....New York
Bolte, Hermann Augustus.....New York
Bonynge, Paul, B.S., E.E., *Brooklyn Polytechnic*.....Tremont, N. Y.
Boote, Charles William, A.B., *Columbia*.....Yonkers, N. Y.
Burnett, Levy Herr, Ph.B., *Kenyon*.....Springfield, O.
Carmalt, James Walton, A.B., *Hamilton*.....Scranton, Pa.
Carruthers, Louis John.....Brooklyn
Cauthers, James Britton, A.B., *Amherst*.....New York
Clarke, William Joseph, A.B., *Columbia*.....New York
Conville, John Joseph.....New York
Corbin, John.....Plattsburgh, N. Y.
Costello, Richard R., A.B., *Manhattan*.....New York
Cowen, Thomas Bigelow, A.B., *Williams*.....New York
Culbertson, Henry Coe, A.B., *University of Cincinnati*.....Cincinnati, O.
Curtiss, Alfred Loomis, A.B., *Yale*.....New York
de Forest, Johnston, A.B., *Yale*.....New York
Deignan, James Herbert, A.B., *N. Y. City College*.....New York
Deming, Sylvester Chittenden, A.B., *Williams*.....Arlington, Vt.
Eldridge, George Dyer, Jr., A.B., *Johns Hopkins*.....Westfield, Mass.
Ellison, Mark Hugo.....New York
Ellison, Millard Henry, A.B., *N. Y. City College*.....New York
Falck, Albert.....New York

Farnsworth, Philo Taylor, Jr.....Salt Lake City, Utah
Fay, Charles Jarvis, A.B., *Yale*.....Hartford, Conn.
Finney, Adelbert Howard, Ph.B., *University of Michigan*.....Cleveland, O.
Flanagan, Edward James.....Brooklyn
Fleischmann, Charles Russell, A.B., *Harvard*.....New York
Fleischmann, Ernest Henry.....New York
Fowler, Carl Hitchcock, A.B., B.S., *University of Minnesota;*
A.M., *Columbia*, Buffalo, N. Y.
Franc, James Joseph, Ph.B., *University of Michigan;*
A.M., *Columbia*, Toledo, O.
Friedman, Jacob Lawrence.....New York
Frierson, James Nelson, B.L., *Hobart*.....Stateburg, S. C.
Frost, Harry Raymond.....Poughkeepsie, N. Y.
Gennert, Henry.....Greenville, N. J.
Gennert, William Oscar, A.M., *Columbia*.....Greenville, N. J.
Gentzlinger, Charles Frederick.....New York
Gibson, Seth Ashley, A.B., *Brown*.....Providence, R. I.
Goldberg, Lawrence, B.S., *N. Y. City College*.....New York
Goodelman, Simon, B.S., *N. Y. University*.....New York
Gros, Frederic, B.S., *Hanover*.....Delphi, Ind.
Gros, Harry Eugene, B.S., *Hanover*.....Delphi, Ind.
Grosner, Benjamin Alexander.....New York
Harden, Alfred Dearing, A.B., *Johns Hopkins*.....Savannah, Ga.
Hargrave, George Edwin.....New York
Hildreth, Loring Townsend, A.B., *Harvard*.....New York
Hodges, William Van Derveer.....Denver, Colo.
Hoeninghaus, Fritz Wilhelm, A.B., *Yale*.....New York
Humphreys, May, A.B., *Yale*.....New York
Hunt, Frederick Lincoln, A.B., *N. Y. City College*.....New York
Iselin, John Henry, A.B., *Harvard*.....New York
Israel, Isidore.....New York
Jacobs, Ralph Ketchum.....Brooklyn
Johnston, Henry Selden, A.B., *Yale*.....New York
Kerr, John Campbell, A.B., *Princeton*.....Englewood, N. J.
Killgore, Robert B.....New York
Kiralfy, Harry Bolossy.....New York
Knowles, Robert.....Portsmouth, O.
Knox, Herbert Allen, A.B., *N. Y. City College;* A.M., *Columbia*...New York
Lampman, Leonard B., A.B., *Yale*.....Newark, N. J.
Latourette, Lyman Ezra, A.B., *McMinnville College*.....Oregon City, Ore.
Lawshe, Jay Earl, A.B., *Leland Stanford, Jr*.....Tacoma, Wash.
Lee, James Thomas Aloysius, B.S., *N. Y. City College;*
A.M., *Columbia*, New York
Leiter, Milton Myron, A.B., *Harvard*.....Syracuse, N. Y.
Lese, Frederick, B.S., *N. Y. City College*.....New York
Lesser, Joseph Mapes.....New York
Lessig, William Brooke.....Pottstown, Pa.

Lockhart, Leslie Scott.....New York
Lockwood, William Andrew, A.B., *Williams*.....Westfield, Mass.
Long, Percy Carr.....Plainfield, N. J.
Long, Theodore.....New York
Loomis, Andrew Gregg, A.B., *Bucknell*.....Lewisburg, Pa.
Lutz, Francis Amanda, A.B., *Kansas University*.....Beloit, Kan.
McKee, Thomas Heron.....Bozeman, Mont.
Mason, Herbert Clinton.....Vernon Centre, N. Y.
Miller, Charles Wesley, A.B., *Leland Stanford, Jr.*, Guthrie, Oklahoma Terr.
Mills, Edward Kirkpatrick, A.B., *Princeton*.....Morristown, N. J.
More, Taylor.....Deposit, N. Y.
Morrow, Dwight Whitney, A.B., *Amherst*.....Allegheny, Pa.
Murray, Hugh Charles, A.B., *N. Y. City College*.....New York
Murtha, Eugene Isherwood, A.B., *St. Francis Xavier*.....New York
Myers, Saul Sidney.....New York
Newgass, George Washington, A.B., *Harvard*.....New York
Palmer, Victor Edwin, A.B., *Ripon*.....Ripon, Wis.
Paret, Walter Palmer, A.B., *Yale*.....New York
Perry, Wesley Vick, A.B., *Princeton;* A.B., *Bethel*.....Russellville, Ky.
Petty, Nathan Orcutt, A.B., *Columbia*.....Riverhead, N. Y.
Phelan, John Joseph, A.B., *Manhattan*.....New York
Phillips, Harold Meyer, B.S., *N. Y. City College*.....New York
Planten, William Rutger John.....Brooklyn
Pollak, Francis D., A. B., *Harvard*.....Summit, N. J.
Pratt, William Henry, A.B., *Allegheny*.....Cresson, Pa.
Priddy, John Emerson, A.B., *Amherst*.....Findlay, O.
Proskauer, Joseph Meyer, A.B., *Columbia*.....Mobile, Ala.
Ramsay, Allen Lawson.....Perth Amboy, N. J.
Redden, William Aloysius.....New York
Reynolds, Jackson Eli, A.B., *Leland Stanford, Jr.*.....Oakland, Cal.
Riker, John Lawrence, 2d., A.B., *Harvard*.....New York
Rosett, Louis Jerome, A.B., *N. Y. City College*.....New York
Ross, Nathan Olin.....Logansport, Ind.
Rumsey, David.....Bath, N. Y.
Ruppert, George E.....New York
Snyder, John Hebard, A.B., *Columbia*.....West Hoboken, N. J.
Solomon, Mortimer.....New York
Sommerich, Otto Charles, A.B., *N. Y. City College*.....New York
Soper, Emmet Harland, Ph.B., *Cornell, Ia*.....Emmetsburg, Ia.
Soper, Erastus Burrows, Jr., A.B., *Cornell, Ia.;*
A.B., *Columbia*, Emmetsburg, Ia.
Staab, Julius, A.B., *Swarthmore*.....Santa Fé, New Mex.
Stein, Morton.....New York
Stern, Harry Levy, A.B., *Washington University;*
A.M., *Chicago University*, St. Louis, Mo.
Tarler, George Cornell, B.S., *N. Y. City College;* A.M., *Columbia*..New York
Taylor, Benjamin Irving.....Rye, N. Y.

Tegen, Frederick Henry.....Newark, N, J.
Thomas, Hiram.....Irwin, Va.
Thorne, Victor Corse, Ph.B., *Yale*.....Bridgeport, Conn.
Tyler, William Seymour, A.B., *Amherst*.....Plainfield, N. J.
Vanderveer, George Francis, A.B., *Leland Stanford, Jr*.....Grinnell, Ia.
Vogt, Carl Vernon.....Morristown, N. J.
Wagner, Oscar, B.S., *N. Y. City College*.....New York
Walker, Roberts, A.B., *Amherst*.....New York
Wheaton, Charles Frederick, A.B., *Columbia*.....Yonkers, N. Y.
Wheelock, Harvey Lincoln, A.B., *Harvard*.....Worcester, Mass.
Whitehead, Will Carleton.....Westfield, N. J.
Wood, Levi Hollingsworth, A.B., *Haverford*.....Mount Kisco, N. Y.

Second Year Class.....134

FIRST YEAR CLASS

Adams, Hugh White, Jr.....Peekskill, N. Y.
Allen, William Keeler.....Falconer, N. Y.
Ames, Bayard Hoyt, A.B., *University of Michigan*.....Denver, Colo.
Anderson, James Wight, A.B., *Williams*.....Springfield, Mass.
Arnegard, Knute, A.B., *University of North Dakota*.....Hillsboro, N. Dak.
Austin, Chellis Asahel.....Canton, N. Y.
Bailey, James McConnell, A.B., *Williams*.....Zanesville, O.
Baker, Charles Grosh, A.B., *Franklin and Marshall*.....Lancaster, Pa.
Baker, Edward Balthaser G.....Watervliet, N. Y.
Barkley, Charles Brackett.....New York
Barnard, Everett Larkin, A.B., *Yale*.....New York
Baum, Joseph Maurice.....New York
Bentel, George E., A.B., *Lafayette*.....New York
Bing, Alexander Max, B.S., *N. Y. City College*.....New York
Birnbaum, Martin, A.B., *N. Y. City College*.....New York
Blackford, Ulysses Grant, A.B., *Hobart*.....Rochester, N. Y.
Bremer, Alexander Magnus.....New York
Burlingame, Frederick Anson, A.B., *Harvard*.....New York
Carr, Sterling Douglas.....Yreka, Cal.
Cobb, William Bruce.....Ashburnham, Mass.
Cole, Ashley Trimble.....New York
Cook, Walter Wheeler, A.B., *Columbia*.....Yonkers, N. Y.
Corse, Arthur William, A.B., *N. Y. City College*.....New York
Corwin, Nathaniel Silleck.....Greenport, L. I.
Cox, Wilson Naylor.....Terre Haute, Ind.
Cushing, Ernest Wolcott, A.B., *Knox*.....Buda, Ill.
de Forest, Henry Lockwood, A.B., *Yale*.....New York
Denison, Robert Fuller, A.B., *Williams*.....Cleveland, O.
Doob, Irving Ephram, B.S., *N. Y. City College*.....New York
Drew, James Byron, A.B., *Curry University*.....Allegheny, Pa.
Duffey, Bennett Edmund.....Port Jervis, N. Y.

Dutton, Ira Jay.....Sherman, N. Y.
Ellenbogen, Joseph Kent.....Allentown, Pa.
Fishel, Leo.....Babylon, L. I.
Fulton, Albert Montgomery, Jr., A.B., *Harvard*.....Monticello, N. Y.
Galt, John Martin.....Sterling, Ill.
Gibson, Joel Jacobus, B.S., *University of Georgia*.....Noonan, Ga.
Graham, John W., Jr., A.B., *Princeton*.....Denver, Colo.
Hackett, Henry S., A.B., *Harvard*.....New York
Hall, Julian Hepworth, B.S., *Eureka College*.....Athens, Ill.
Hall, Louis Harrison, B.S., *Amherst*.....Naugatuck, Conn.
Harris, Isador Ralph.....New York
Harris, Walter Stewart, A.B., *Princeton*.....Minneapolis, Minn.
Hazzard, Harry Conwell, A.B., *Leland Stanford, Jr.*.....San Diego, Cal.
Hedges, George Brown, A.B., *Williams*.....New York
Heller, Bernard Schmaltz, B.S., *N. Y. City College*.....New York
Henderson, Robert Candlish, M.A., LL.B., *Edinburgh University*,
Crieff, Scotland
Henline, Claude Duane, Ph.B., *Drake University*.....Towanda, Ill.
Heydt, Charles Ernest.....New York
Hickey, George Francis.....Brooklyn
Holland, Forbes Joseph, A.B., *St. Francis Xavier*.....New York
Hudson, Raymond Minor, A.B., *Roanoke College*.....Dublin, Va.
Isaacs, Lewis M., Ph.B., *N. Y. University*.....New York
Jadwin, Stanley Palmer.....Brooklyn
Joseph, Louis, B.S., *N. Y. City College*.....New York
Kemp, William Thomas, A.B., *St. John's, Md.*.....Trappe, Md.
Kittle, George Edwin.....New York
Kompfe, Karl Henry, A.B., *University of Louisville*.....Louisville, Ky.
Kresel, Isidor J.....New York
Lambrecht, Joseph William.....New York
Ledwith, T. Augustine, A.B., *St. Francis Xavier*.....New York
Letts, Fred. Dickinson, B.S., *Parsons College*.....Fairfield, Ia.
Levy, Charles.....New York
Levy, William Lipman, Ph.B., *N. Y. University*.....New York
Lewine, Jacob Lester, A.B., *Columbia*.....New York
Logan, Joseph Clayton, A.B., *Roanoke College*.....Salem, Va.
Logan, Robert Restalry, A.B., *Harvard*.....Philadelphia, Pa.
Low, William Gilman, Jr., A.B., *Yale*.....Brooklyn
Lyall, Herbert James, A.B., *Amherst*.....New York
McCoy, Frank, Jr., A.B., *Yale*.....New York
McKeag, Edwin Corwin, A.M., *Rutgers*.....New Brunswick, N. J.
Mackintosh, Kenneth, A.B., *Leland Stanford, Jr.*.....Seattle, Wash.
Marks, David.....Chatham, N. Y.
Mead, David Irving, A.B., *Yale*.....Brooklyn
Merriman, James David, A.M., *Bowdoin*.....Litchfield, Me.
Mills, Franklin Hubbell, A.B., *Williams*.....Amherst, Mass.
Miner, Elijah Daniel.....New York

Mooney, Francis Xavier.....Oneonta, N. Y.
Morey, Arthur Thornton.....Victor, Colo.
Morgan, George Wilson, A.B., *Oberlin*.....New York
Mork, Seymour.....New York
Morrison, Archie Bodine.....New York
Murphy, William Larkin.....Missoula, Mont.
Nellany, Vincent Michael, B.S., *Seton Hall*.....Buffalo, N. Y.
Noll, Frederick Adam.....Chattanooga, Tenn.
Noonan, Thomas Francis, A.B., *St. Francis Xavier*.....New York
Norris, Benjamin Frank.....Brooklyn
Pinchot, Amos Richards Eno, A.B., *Yale*.....New York
Platt, Mark Charles, B.S., *N. Y. City College*.....New York
Platz, Julian M.....New York
Pringle, Edward Graves, A.B., *Missouri State University*.....Foristell, Mo.
Putnam, Albert William, A.B., *Columbia*.....New York
Randolph, Frederick Peyton.....New York
Reilly, Frank Paine, A.B., *University of Rochester*.....Rochester, N. Y.
Richardson, Rodman.....Flushing, N. Y.
Riley, Mathew Ignatius, A.B., *St. Francis Xavier*.....New York
Roach, William MacPherson, C.E., *Pennsylvania Military College*, Chester, Pa.
Robbins, William Henry.....Bayshore, N. Y.
Robinson, Roy Martin, A.B., *University of Kansas*.....Winfield, Kan.
Roll, John Krapp, A.B., *N. Y. City College*.....New York
Rosenbaum, Sidney.....Hillsboro, Tex.
Rosenthal, Charles Meyer.....New York
Roy, Herbert Francis, A.B., *Williams*.....Troy, N. Y.
Saxe, John Godfrey, A.B., *McGill*.....Montreal, Can.
Schurz, Herbert, A.B., *Harvard*.....New York
Schwarz, John Albert.....Kenwood, N. Y.
Schwersenski, Abraham Lincoln.....New York
Seymour, Clarence Mills.....New York
Shaw, Charles F., A.B., *Brooklyn Polytechnic*.....Brooklyn
Shearman, Thomas Gaskell, Jr., A.B., *Yale*.....Paterson, N. J.
Smith, Claude Crayton, A.B., *Emory*.....Palmetto, Ga.
Son, Charles Anchel, A.B., *University of California*.....San Francisco, Cal.
Spiegel, Max Jonas.....Chicago, Ill.
Spiegelberg, Eugene Edward, A.B., *Columbia*.....New York
Spingarn, Arthur Barnett, A.B., *Columbia*.....New York
Stern, Reginald Henry Ellis, A.B., *Harvard*.....New York
Stern, Sydney W. A.B., *N. Y. City College*.....New York
Stewart, William Adams Walker, A.B., *Princeton*.....New York
Stiger, William Dexter, B.S., *Amherst*.....New York
Strauss, Morris Lincoln, A.B., *Columbia*.....College Point, N. Y.
Stripe, Frank Edward.....New York
Theall, Elisha, Jr., *U. S. Naval Academy*.....Brooklyn
Thomson, William D., Ph.B., *Emory*.....Atlanta, Ga.
Tillotson, John Beach.....New York

Tillotson, William Leslie.....Atlantic Highlands, N. J.
Tucker, Joseph Whittemore Sweet.....New York
Van Kleeck, Myndert James, B.L., B.S., *Hobart*.....Seneca Falls, N. Y.
Walker, Clarence Frederick.....Guttenberg, N. J.
Ware, Sedley Lynch, B.L., *Sorbonne, Paris;* A.B., *Oxford, Eng.*, New York
Wattenberg, Abraham Mordecai.....New York
Weimert, Orson John.....Buffalo, N. Y.
Wendt, John.....New York
Wetmore, William Shepard K., A.B., *Yale*.....Newport, R. I.
Wing, William Arthur.....New Bedford, Mass.
Ybor, Rafael Vincente Martinez, A.B., *Havana University*.....Havana, Cuba
York, Frank Bernard.....Brooklyn
First Year Class.....136

SPECIAL STUDENTS

Martin, Joseph Hillyer Thayer, Jr., A.B., *Harvard*.....Woodbridge, N. J.
Shattuck, Edwin Paul.....Portland, Ore.
Special Students.....2

Seniors of the College.....9

SUMMARY

Third Year Class	94
Second Year Class	134
First Year Class	136
Special Students	2
Students primarily registered under this faculty	366
Seniors of the College	9
Total	375

PARENTAGE OF DEGREES

Adelbert College	1
Allegheny College	1
Amherst College	11
Bates College	1
Blackburn University	1
Bowdoin College	2
Brown University	2
Bucknell College	1
Christian Brothers College, St. Louis, Mo	1
Columbia College	27
Cornell College, Ia	2
Curry University	1
Drake University	1
Edinburgh University	1
Emory College	2

Eureka College	1
Franklin and Marshall College	1
Gymnasium, Frankfurt a/M	1
Hamilton College	1
Hanover College, Ind	2
Harvard University	22
Haverford College	1
Highland University, Kan	1
Hobart College	3
Johns Hopkins University	3
Kenyon College	1
Knox College	1
Lafayette College	1
Leland Stanford, Jr., University	6
Lincoln University	1
McGill University, Canada	2
McMinnville College, Ore	1
Manhattan College	4
Mount St. Mary's College, Md	1
New York City College	27
New York University	6
Oberlin College	1
Oxford University, Eng	1
Parsons College, Ia	1
Pennsylvania Military College	1
Polytechnic Institute, Brooklyn	4
Princeton University	8
Ripon College	1
Roanoke College	2
Rutgers College	1
St. Francis Xavier's College	6
St. John's College, Md	1
St. John's College, N. Y	1
Seton Hall College	1
Swarthmore College	1
Syracuse University	1
University of California	1
University of Chicago	1
University of Cincinnati	1
University of Georgia	1
University of Havana	1
University of Kansas	2
University of Louisville	1
University of Michigan	3
University of Minnesota	1
University of Missouri	1
University of North Dakota	1

University of Rochester	2
University of the South	1
University of Wisconsin	1
U. S. Naval Academy	1
Washington University, St. Louis, Mo	1
Williams College	10
Yale University	26
69 Colleges and Universities. Total Graduates	229

SCHOOL OF MEDICINE

COLLEGE OF PHYSICIANS AND SURGEONS

The instruction in medicine is given under the following departments:

ANATOMY
CHEMISTRY, GENERAL
CHEMISTRY, PHYSIOLOGICAL
DERMATOLOGY
DISEASES OF CHILDREN
GENITO-URINARY AND VENEREAL DISEASES
GYNECOLOGY
LARYNGOLOGY
MATERIA MEDICA AND THERAPEUTICS
NEUROLOGY
OBSTETRICS
OPHTHALMOLOGY
OTOLOGY
PATHOLOGY
PHYSICS
PHYSIOLOGY
PRACTICE OF MEDICINE
SURGERY

Officers of the Faculty

JAMES W. MCLANE, M.D.....*Dean and Ex-Officio Member of the University Council*
JOHN G. CURTIS, M.D.....*Elected Delegate to the University Council*
EDWIN B. CRAGIN, M.D.....*Secretary*

The Faculty

SETH LOW, LL.D., *President*

JAMES W. MCLANE, M.D., *Professor of Obstetrics*
FRANCIS DELAFIELD, M.D., *Professor of the Practice of Medicine*
JOHN G. CURTIS, M.D., *Professor of Physiology*
GEORGE M. TUTTLE, M.D., *Professor of Gynecology*
GEORGE L. PEABODY, M.D., *Professor of Materia Medica and Therapeutics*
WILLIAM T. BULL, M.D., *Professor of Surgery*
M. ALLEN STARR, M.D., *Professor of Diseases of the Mind and Nervous System*
GEORGE S. HUNTINGTON, M.D., *Professor of Anatomy*
ROBERT F. WEIR, M.D., *Professor of Surgery*
T. MITCHELL PRUDDEN, M.D., *Professor of Pathology, Director of the Laboratories of Histology, Pathology, and Bacteriology*
—— ——— ——, *Professor of Physiological Chemistry*

NOTE.—For details as to other officers of instruction, see departmental statements.

GENERAL STATEMENT

The College of Physicians and Surgeons, on July 1, 1891, became, under the authority of the Legislature, a part of Columbia University. This merger, which makes the medical department in a complete sense an integral part of the University system, largely increases the usefulness of the Medical School, favors the thoroughness of scientific medical education, and promotes scientific research. The accessions to the teaching force, notably in the Departments of Anatomy and Pathology, and in the physiological and other laboratories, permit the realization, to a degree previously quite impossible, of the great opportunities for instruction and research afforded by the excellence of the dissecting-rooms, the laboratories, and apparatus.

The college occupies a group of buildings, given by the late William H. Vanderbilt and members of his family, and by William D. Sloane, Esq., which stand upon thirty contiguous lots of land, bounded on the south, west, and north by Fifty-ninth Street, Tenth Avenue, and Sixtieth Street, respectively, and lying immediately opposite to the Roosevelt Hospital.

The other departments of Columbia University are reached by either the Amsterdam Avenue or the Boulevard surface-cars, which pass the grounds on Morningside Heights.

The station, which is a few steps from the college, at the corner of Fifty-ninth Street and Ninth Avenue, is the point of union of the Ninth Avenue and Sixth Avenue Elevated Railroads, by either of which the buildings are immediately accessible from the north and south.

The "across-town" surface-cars of the Belt-line Surface Railway move east and west along Fifty-ninth Street, pass the site of the college, and place it in easy communication with the Second and Third Avenue Elevated Railroads, and with the numerous lines of surface-cars which reach Fifty-ninth Street from the north and south. All important points in the city, including the various hospitals, can thus readily be reached from the college without a walk of any length.

The buildings appertaining to the college are three in number :

THE COLLEGE BUILDING PROPER ;
THE VANDERBILT CLINIC ;
THE SLOANE MATERNITY HOSPITAL.

The COLLEGE BUILDING PROPER has been designed to facilitate that combination of didactic instruction with laboratory work which is essential to a modern scientific training. It consists of a *southern portion*, measuring 140 feet by 43 feet, extending along Fifty-ninth Street ; of a *northern portion*, 96 feet by 43 feet, extending along Sixtieth Street ; and of a *middle portion*, 96 feet by 55 feet, connecting the other two. The total area covered is therefore 15,428 square feet. Each story above the basement of the northern and southern portions has been built "in the clear," and contains neither brick partitions nor iron columns. It is therefore possible to remodel the interior at any future time.

Through the recent generous gift of Messrs. Cornelius, William K., Frederick W., and George W. Vanderbilt, there has been rendered possible an important enlargement of the college building proper, to provide additional facilities for anatomical teaching and for practical work in Pathology and Bacteriology.

The south wing of the college has been extended on Fifty-ninth Street eastward for 55 feet, the depth of the new wing being 80 feet. This new building is four stories high, and is devoted to the Department of Anatomy. The basement contains the cast- and modelling-rooms, the corrosion-room, and the reference osteological collection. The first and second stories are occupied by the Museum of Human and Comparative Morphology, the first floor being provided with a gallery, greatly increasing the available floor-space.

The Morphological Research Laboratory occupies the third story of the new anatomical building, affording ample accommodations for the researches of the officers of the department and for post-graduate students.

The fourth floor forms an extension to the original dissecting-room. The new class-room for practical anatomy will accommodate over four hundred students, and by means of the artificial cooling plant, work can be carried on without regard to the outside temperature.

The north end of the fourth floor is occupied by a small auditorium for anatomical demonstrations. It has overhead light and an arrangement of seats carefully planned so as to bring each member of the sections close to the object of the demonstration.

The two upper floors of the new building over the Vanderbilt Clinic extension are made continuous with the space formerly occupied by the Department of Pathology, and the whole is devoted to the work of this department in Pathology, Bacteriology, Clinical Microscopy, and Normal Histology, and to such an extension of these as the plans of the new four years' course require. There is on the fifth floor in addition to the large class laboratories a series of larger and smaller rooms for advanced students and research work in this theme. On the fourth floor there is a large laboratory for special advanced students in Pathology and for research, a series of private rooms for the instructors, and a departmental library.

Vanderbilt Clinic

The new VANDERBILT CLINIC extends from the corner of Sixtieth Street and Tenth Avenue to the north wing of the college buildings, covering an area 180 by 60 feet, and is three stories in height. It is twice the size of the original building.

This institution was built and endowed by the sons of the late William H. Vanderbilt as a memorial of their father. It supplies a fully equipped dispensary service for the sick poor. It also affords ample material for extended practical clinical instruction in the various departments of medicine and surgery, as the professors, with their clinical assistants, have the entire charge of its practice.

During the year 1895, 145,305 patients were treated in the dispensary, of whom 46,449 were new patients. During the year 1896, 169,584 patients were treated, of whom 54,667 were new.

The original building having proved inadequate to accommodate these large numbers, the sons of Mr. Vanderbilt have recently (1895) united in an additional gift of $350,000, enabling the size of the building to be doubled. In the enlarged building, ample space is provided, not only for the reception of the constantly increasing number of patients, but also for the instruction of the students in small classes in each of the eleven different departments. Two large dark rooms with twenty stalls are provided for instruction in the use of the ophthalmoscope and laryngoscope. Each department has a room for the practical instruction of small groups of students, in addition to the rooms devoted to the treatment of patients. There is a large theatre for the clinical lectures, accommodating about four hundred students, and a smaller lecture hall where one hundred can be seated.

All modern appliances for the treatment of diseases have been introduced, so that students can learn thoroughly the use of all methods in each department, and thus can acquire a practical knowledge of all the "specialties" in medicine.

Sloane Maternity Hospital

The Sloane Maternity Hospital is situated upon the college grounds. The obstetric service is under the exclusive direction of the Professor of Midwifery in the college, the Instructor in Obstetrics being the Resident Physician. The hospital has been greatly enlarged during the last year, so as to furnish seventy-two additional beds for patients, and increased accommodation for the House Staff, students, and nurses. The operating-room will accommodate fifty-one students.

REQUIREMENTS FOR ADMISSION

No entrance examinations are conducted at this college, but all students who matriculate with the intention of becoming candidates for the degree of Doctor of Medicine must present a *medical-student certificate from the Regents of the University of the State of New York.*

For information concerning the requirements for obtaining this medical-student certificate, address, *Examination Department, University of the State of New York, Albany, N. Y.*

CURRICULUM

The work required of the students at this college who are candidates for the degree of M.D. covers four years of study according to the curriculum set forth below in outline.

The right is reserved to make amendments to this curriculum as experience may prove necessary.

Programmes of the exercises, giving time and place, will be distributed among the matriculants at the beginning of each annual session.

The following statement is drawn up from the point of view of the student, and shows what is expected from each matriculant taking the regular curriculum.

In all subjects which are not completed in a single year the instruction offered to a given student will be different each year.

The regular instruction for 1897–8 began on Monday, October 4, 1897, at 11 A.M. Commencement will be on Wednesday, June 8, 1898.

Every student intending to be a candidate for the degree of M.D. must register his name in person within the first seven working days of each session.

Students who have pursued elsewhere courses in Physics and General Chemistry reasonably equivalent to those given at this college may be exempted from the work in those subjects, after satisfactory examination.

First Year

PHYSICS.

Lectures, combined with demonstrations, 3 a week for one half the year.

Laboratory Work, 3-hour exercises once a week for one half the year.

GENERAL CHEMISTRY.

Lectures, 2 a week.

Conferences, 2 a week for one half the year.

Laboratory Work, 2-hour exercises twice a week for one half the year.

ANATOMY, begun.

Demonstrations to sections, 4 a week for each student.

Laboratory Work in dissection, 18 to 20 hours a week, for from 3 to 5 periods of 4 weeks each.

NORMAL HISTOLOGY, begun.

Laboratory Work, 2-hour exercises 3 times a week for one half the year.

PHYSIOLOGY, begun.

Lectures combined with demonstrations, 3 a week.

Demonstrations to sections, from 1 to 3 a week for each student.

EXAMINATIONS upon the work of the first year.

Second Year

ANATOMY, finished.

Lectures combined with demonstrations, 3 a week.

Demonstrations to sections. 4 a week for each student for one half the year; 5 a week for each student for one half the year.

Laboratory Work in dissection, 10 to 12 hours a week, for from 1 to 3 periods of 4 weeks each.

NORMAL HISTOLOGY, finished.

Laboratory Work, 2-hour exercises twice a week for one half the year.

PHYSIOLOGY, finished.

Lectures combined with demonstrations, 3 a week.

Demonstrations to sections, from 1 to 3 a week for each student.

PHYSIOLOGICAL CHEMISTRY.

Nature of instruction to be announced hereafter; there will be no instruction in this branch during the session of 1897–8.

PATHOLOGICAL ANATOMY, begun ; the technique of autopsies.

Attendance at Autopsies, with practical instruction, once a week for 8 weeks.

BACTERIOLOGY.

Laboratory Work, 2-hour exercises 3 times a week for one fourth the year.

MATERIA MEDICA AND THERAPEUTICS, begun.

Lectures, 3 a week.

OBSTETRICS AND GYNECOLOGY, begun.

Recitations combined with demonstrations to sections, 1 a week for each student.

EXAMINATIONS upon the work of the second year.

Third Year

MATERIA MEDICA AND THERAPEUTICS, finished.

Lectures, 3 a week.

PATHOLOGICAL ANATOMY, finished.

Demonstrations to sections, 2 a week for each student.

GENERAL PATHOLOGY AND PATHOLOGICAL HISTOLOGY.

Laboratory Work, 2-hour exercises 3 times a week for one half the year.

THE PRACTICE OF MEDICINE, begun.

Lectures, 3 a week.

Clinical Lectures at the Vanderbilt Clinic, once a week.

Clinical Lectures or Instruction in the wards at the Roosevelt Hospital, once a week ; at the New York Hospital, once a week for one half the year.

Practical Clinical Instruction to sections in physical diagnosis, for each student, twice a week for 16 weeks.

DISEASES OF THE MIND AND NERVOUS SYSTEM, begun.

Lectures, 1 a week, December to May.

THE PRINCIPLES AND PRACTICE OF SURGERY, begun.

Lectures, 2 a week.

Clinical Lectures at the Vanderbilt Clinic, twice a week.

Clinical Lectures and the witnessing of operations at the New York or Roosevelt Hospital, once a week ; at the New York Hospital (in addition to the above), once a week for one half the year ; at the Presbyterian Hospital, once a week for one half the year.

Practical Clinical Instruction to sections, for each student, twice a week for 16 weeks at the Vanderbilt Clinic and out-patient department of the Roosevelt Hospital.

Optional—Clinical Lectures and the witnessing of operations at St. Luke's Hospital.

OBSTETRICS, continued.

Lectures, 3 a week, October to March.

GYNECOLOGY, continued.

Lectures, 3 a week, March to May.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Clinical Lectures and the witnessing of operations at the Roosevelt Hospital, by sections, 6 exercises for each student.

Practical Clinical Instruction to sections, 6 exercises for each student.

Venereal and Genito-Urinary Diseases.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Clinical Lectures and the witnessing of genito-urinary operations at Bellevue Hospital, 1 a week for one half the year.

Practical Clinical Instruction to sections, 12 exercises for each student.

Optional—Clinics at the City Hospital, Blackwell's Island, 1 a week for two months.

Diseases of the Eye.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Practical Instruction to sections in the use of the opthalmoscope and the functional examination of the eye, 12 exercises for each student.

Optional—Practical Clinical Instruction to sections at the New York Ophthalmic and Aural Institute.

Diseases of the Ear.

Practical Clinical Instruction to half-sections, from 6 to 8 exercises for each student.

Four Didactic Lectures (delivered separately to each section, and in combination with a recitation) on general aural pathology and therapeutics.

Examinations upon the work of the third year.

Fourth Year

The Practice of Medicine, finished.

Lectures, 3 a week.

Clinical Lectures at the Vanderbilt Clinic, 2 a week.

Clinical Lectures or Instruction in the wards at the Roosevelt Hospital, once a week ; at the New York Hospital, once a week for three months.

Practical Clinical Instruction to sections in the wards of the Roosevelt, Bellevue, or Presbyterian Hospitals, for each student, 2-hour exercises 3 times a week for 8 weeks.

Optional—Clinical Instruction in Bellevue and Presbyterian Hospitals, once a week.

Diseases of the Mind and Nervous System, finished.

Lectures, 1 a week, December to May.

Clinical Lectures at the Vanderbilt Clinic, once a week.

Practical Clinical Instruction to sections in the diagnosis of diseases of the nervous system, 10 exercises for each student.

Clinical Microscopy.

Laboratory Work, 2-hour exercises 3 times a week for 8 weeks.

The Principles and Practice of Surgery, finished.

Lectures, 2 a week.

Clinical Lectures at the Vanderbilt Clinic, 2 a week.

Clinical Lectures and the witnessing of operations at the New York or Roosevelt Hospital, once a week ; at Bellevue Hospital, once a week ; at the Presbyterian Hospital, once a week.

Surgical Demonstrations at the Roosevelt Hospital, once a week for one half the year.

Practical Clinical Instruction to sections in the wards of Bellevue Hospital, for each student, 2-hour exercises three days a week for 7 weeks.

Operative Surgery on the Cadaver for sections, 12 lessons for each student.

Optional—Clinical Lectures and the witnessing of operations at the New York Hospital (additional to the above); at St. Luke's Hospital.

ORTHOPÆDIC SURGERY.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Practical Clinical Instruction to sections 12 exercises for each student.

OBSTETRICS, finished.

Two weeks' residence at the Sloane Maternity Hospital and attendance upon confinements.

Practical Clinical Instruction to sections, at the Sloane Maternity Hospital, for each student, daily for 1 week.

GYNECOLOGY, finished.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

DISEASES OF CHILDREN.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Practical Clinical Instruction to sections, 12 lessons for each student.

DISEASES OF THE SKIN.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Practical Clinical Instruction to sections, 12 lessons for each student.

DISEASES OF THE THROAT AND NOSE.

Clinical Lectures at the Vanderbilt Clinic, 1 a week.

Practical Clinical Instruction to sections, 12 lessons for each student.

EXAMINATIONS upon the work of the fourth year.

Clinics at the Vanderbilt Clinic

(See page 195.)

Eleven clinics are given each week at the Vanderbilt Clinic, as follows:

SURGICAL—Professor BULL, Thursdays, at 12 M.; Professor WEIR, Mondays, at 12 M.

ORTHOPÆDIC SURGERY—Professor GIBNEY; Fridays, 12 M.

DISEASES OF THROAT AND NASAL PASSAGES (with laryngoscopic and rhinoscopic demonstrations)—Professor LEFFERTS; Mondays, 2 P.M.

DISEASES OF THE SKIN—Professor FOX; Mondays, 3 P.M.

DISEASES OF THE EYE—Professor KNAPP; Tuesdays, 3 P.M.

DISEASES OF CHILDREN—Professor JACOBI; Wednesdays, 2.30 P.M.

VENEREAL AND GENITO-URINARY DISEASES—Professor TAYLOR; Thursdays, 2 P.M.

MEDICAL—Professor DELAFIELD; Thursdays, 3 P.M.

DISEASES OF THE MIND AND NERVOUS SYSTEM—Professor STARR; Fridays, 2 P.M.

GYNECOLOGICAL—Professor TUTTLE; Fridays, 3 P.M.

Hospital Clinics

See the several departments. For appointments to the House Staffs of the hospitals, see page 210.

Besides the Vanderbilt Clinic, the general and special hospitals of New York afford most important fields for clinical teaching. This college is strongly represented on the staffs of these institutions, and regular clinical instruction at hospitals is made a prominent feature of the curriculum. *Admission is free* to all matriculated students. At all the following hospitals instruction is given by officers of the college :

SLOANE MATERNITY HOSPITAL, corner of Fifty-ninth Street and Tenth Avenue.

ROOSEVELT HOSPITAL—This has long been the seat of thorough clinical work, and has become of special importance in this respect from its position immediately opposite the new buildings of the College of Physicians and Surgeons upon Fifty-ninth Street, between Ninth and Tenth Avenues. Moreover, this hospital, a few years ago, received a bequest of several hundred thousand dollars for the erection and endowment of THE SYMS OPERATING THEATRE, which now offers unrivalled facilities for instruction in operative surgery.

THE MCLANE OPERATING THEATRE is used for operative gynecology by Professor Tuttle exclusively.

The Roosevelt is a general hospital of one hundred and eighty beds, and it also possesses a flourishing out-patient department.

Public clinics are given here as follows, throughout the college session :

Medical—Mondays, at 4 P.M., Professors DELAFIELD, DRAPER, and PEABODY

Surgical—Saturdays, at 2.30 P.M., Professor MCBURNEY

Gynecological—Tuesdays, Thursdays, and Saturdays, at 2.30 P.M., Professor TUTTLE

NEW YORK HOSPITAL, Fifteenth Street, between Fifth and Sixth Avenues—Reached from the Medical College by taking the Sixth Avenue Elevated Railroad at the corner of Ninth Avenue and Fifty-ninth Street, and leaving the cars at the corner of Fourteenth Street and Sixth Avenue ; or by the surface-cars.

This is a general hospital of the highest class, of one hundred and fifty beds, with an out-patient department.

The public clinics are the :

Medical—Saturdays, at 9.30 A.M., from November to May, Professors PEABODY and BALL

Surgical—Wednesdays, at 2.30 P.M., October to February, Professor WEIR ; Saturdays, at 2.30 P.M., Professors WEIR and BULL ; Thursdays, at 3.30 P.M., February to June, Dr. HARTLEY

BELLEVUE HOSPITAL, Twenty-sixth Street and East River—Directly accessible from the college by the horse-cars of the Belt Line, which run from the door of the college to that of the hospital ; or, by leaving the horse-car at the corner of Fifty-ninth Street and Third Avenue, and taking the Third Avenue Elevated train to the corner of Third Avenue and Twenty-eighth Street.

This hospital has eight hundred beds and receives sixteen thousand patients annually, of whom one fourth are in the exclusive charge of officers of this college.

The service of the out-patient department also covers a great range of practice; and two newly built operating theatres, a large and a small one, are in full use.

The following clinics are held here during the session:

Medical—Tuesdays, 2.30 P.M., Professor JACOBI, and Drs. JAMES and JACKSON

Surgical—Tuesdays, 2.30 P.M., Drs. F. H. MARKOE and GALLAUDET

Diseases of Children—Tuesdays, 2.30 P.M., from April to June, Professor JACOBI

Venereal and Genito-Urinary—Tuesdays, 2.30 P.M., Professor TAYLOR

ST. LUKE'S HOSPITAL, Morningside Heights, One hundred and Thirteenth Street and Amsterdam Avenue.

Surgical—Dr. F. H. MARKOE gives a clinic to which students are admitted on Fridays, at 2.30 P.M., from August to February.

PRESBYTERIAN HOSPITAL, Madison Avenue and Seventieth Street—Accessible from the Medical School by the Fifty-ninth Street horse-cars of the Belt Line to Madison Avenue, and by the cars on this avenue to Seventieth Street.

This is a large general hospital of three hundred and thirty beds. The following clinics will be held here throughout the session:

Surgical—Tuesdays, 2.30 P.M., Dr. MCCOSH

Medical—December, January, February, March, April, Tuesdays, 2.30 P.M., Professor KINNICUTT

CITY HOSPITAL (formerly CHARITY HOSPITAL), Blackwell's Island, East River. To reach this institution the steamer should be taken at the foot of East Fifty-second Street. This hospital offers a peculiarly rich field for the study of venereal and genito-urinary diseases, over two thousand such cases being received yearly. Dr. HAYDEN gives a clinic as follows:

Venereal and Genito-Urinary—Wednesdays, 2 P.M., from February 1st to April 1st.

WILLARD PARKER HOSPITAL, foot of East Sixteenth Street; reached from the Medical School by the cars of the Belt Line: RIVERSIDE HOSPITAL, North Brother Island, East River; reached by special boat from the foot of East One Hundred and Thirty-eighth Street.

These hospitals, in charge of the New York City Health Department, offer a rich field for the study of *Contagious Diseases* not admitted to other hospitals in the city, such as diphtheria, scarlet fever, small-pox, typhus fever, measles, and others. Dr. J. W. BRANNAN gives a clinic to which students are admitted in small sections after special registration, on Tuesdays and Saturdays, at 3 P.M., in November, December, March, and April.

NEW YORK CANCER HOSPITAL, One Hundred and Sixth Street and Eighth Avenue—Elevated Railroad station, One Hundred and Fourth Street and Ninth Avenue. It can be reached also by the Eighth Avenue surface road.

One clinic a week is held here, viz.:

Gynecological—Tuesdays, 9 A.M. Dr. GEO. W. JARMAN

NEW YORK OPHTHALMIC AND AURAL INSTITUTE, 44 and 46 East Twelfth Street—Reached by the Sixth Avenue Elevated train, which should be left at the Fourteenth Street station; or by the Ninth Avenue and Broadway Cable cars.

This hospital has forty beds, and a large daily dispensary service is held for diseases of the eye and ear. Throughout the session the following clinic is held:

Ophthalmological—(Admission by invitation of sections). Selected cases for diagnosis and treatment ; the most important operations on the eye. Saturdays, 2.30 to 5 P.M. Professor KNAPP

EXPENSES

(See page 17.)

BOARD

Information in regard to board can be obtained from the secretary of the Students' Movement, through the Registrar, Mr. E. T. Boag, at his office in the college. Prices range from $5 to $9 per week.

CORRESPONDENCE

Letters requesting information should be addressed to Edwin B. Cragin, M.D., Secretary of the Faculty, 437 West Fifty-ninth Street, New York.

EXAMINATIONS AND STANDING

Each student must be examined at the close of each session upon the work of that session.

A second examination, for candidates found deficient at the close of the first, second, or third year's work, will be held during the week before the opening of the following session.

Admission to Advanced Standing

Admission may be granted to advanced standing at the beginning of the second or of the third year, but not of the fourth year without the special consent of the faculty.

Every applicant for advanced standing will be required (1) to present satisfactory evidence of having attended, in a recognized medical school, courses reasonably equivalent to those already attended by the class to which he seeks admission ; (2) to be examined for admission in all the subjects in which the said class shall have been examined already ; (3) to present a medical-student certificate from the Regents of the University of the State of New York ; (4) to matriculate with the payment of the regular matriculation fee (five dollars).

EXEMPTION FROM PHYSICS AND GENERAL CHEMISTRY

Students who have pursued elsewhere courses similar to those given at this college may be exempted from the first-year work in Physics and General Chemistry after passing satisfactory examinations in these subjects.

These examinations will be held each autumn just before the opening of the session.

STANDING AT THE END OF FIRST YEAR *

The standing of a student for the first year will be determined as follows :

1. *Physiology*, by an examination in writing upon the lectures and demonstrations of the year.

2. *Anatomy*, by (*a*) a record of the student's practical work during the year ; (*b*) a practical examination ; (*c*) a brief examination in writing.

3. *Normal Histology*, as for Anatomy.

4. *Physics and Chemistry*, by (*a*) a record of the student's practical work during the year ; (*b*) a practical examination in Physics ; (*c*) a practical examination in Chemistry ; (*d*) an examination, in writing, in Physics and Chemistry.

A bad record of practical work in a department may bar a student from examination ; or a bad practical examination may bar him from an examination in writing ; the result in either case being failure in the year's work in that department.

No student will be permitted to advance with his class from the first to the second year, unless his standing shall have been found satisfactory, before the beginning of the work of the second year, in three out of the four departments of (1) Physics and Chemistry ; (2) Anatomy ; (3) Normal Histology ; (4) Physiology.

A student found deficient in one only of the four departments of the first year may be permitted to advance with his class, on condition that he make good his first year's standing in the department in which he shall have failed, before being admitted to any of the examinations upon the studies of the second year held at the end thereof.

STANDING AT THE END OF THE SECOND YEAR

The standing, in the respective departments, of a student at the end of his second year will be based upon the following tests, to be applied by, or under the direction of, the Professor in charge of the department, unless otherwise expressly specified :

Anatomy.

(1) A record of practical work during the year.
(2) A practical examination in Anatomy.
(3) A written examination, of a length to be determined by the Professor, and to be judged directly by him.

Normal Histology.

(1) A record of practical work during the year.
(2) A practical examination in Normal Histology.
(3) A brief written examination, of a length to be determined by the Professor of Pathology.

* The provisions specified under this heading will not hold good after the autumn examinations of 1897.

Physiology.

A written examination, of a length to be determined by the Professor, and to be judged directly by him, upon the subjects covered by the lectures and demonstrations of the year.

Materia Medica and Therapeutics.

A written examination, of a length to be determined by the Professor, and to be judged directly by him, upon the subjects covered by the instruction of the year.

Bacteriology.

(1) A record of practical work during the year.
(2) A practical examination in Bacteriology.
(3) A brief written examination, of a character to be determined by the Professor of Pathology.

Pathological Anatomy.

Attendance at autopsies. No tests.

Obstetrics.

A written examination, of a length to be determined by the Professor, upon the subjects covered by the instruction of the year.

Gynecology.

A written examination, of a length to be determined by the Professor, upon the subjects covered by the instruction of the year.

No student will be permitted to advance with his class from the second to the third year unless, A) his standing shall have been found satisfactory, before the beginning of the third year, in *five* out of the *seven* studies of 1) Physiology, 2) Materia Medica and Therapeutics, 3) Obstetrics, 4) Gynecology, 5) Anatomy, 6) Normal Histology, 7) Bacteriology; and unless, B) the five studies in which his standing shall have been found satisfactory, as above, include not less than two of the following three studies, viz.: 1) Anatomy, 2) Normal Histology, and 3) Bacteriology.

A student of the second year found deficient according to the terms of the above may be permitted to advance with his class, but must make good all deficiencies before entering upon the exercises of his fourth year.

The annual examinations will be held after the close of the second year's instruction; and further examinations, for candidates found deficient, will be held during the week before the opening of the following session.

A candidate for admission to advanced standing at the beginning of the third year may be so admitted either unconditionally or conditionally. In the latter case, his admission will be upon the same terms as govern students who have pursued at this college the curriculum of the second year.

STANDING AT THE END OF THE THIRD YEAR

The standing, in the respective departments, of a student at the end of his third year will be based upon the following tests, to be applied by, or under the direction of, the Professor in charge of the department, unless otherwise expressly specified:

Materia Medica and Therapeutics.

A written examination, of a length to be determined by the Professor, and to be judged directly by him, upon the subjects covered by the instruction of the year.

Pathological Anatomy.

Attendance at demonstrations. A written examination, with Pathological Histology.

Pathological Histology.

1) A record of practical work during the year.
(2) A practical examination in Pathological Histology.
(3) A written examination, of a length to be determined by the Professor of Pathology, and to be judged directly by him.

The Practice of Medicine.

(1) A record of practical work during the year in Physical Diagnosis.
(2) A written examination, of a length to be determined by the Professor, and to be judged directly by him, upon the subjects covered by the instruction of the year.

Diseases of the Mind and Nervous System.

A written examination, of a length to be determined by the Professor, and to be judged directly by him, upon the subjects covered by the instruction of the year.

The Principles and Practice of Surgery.

(1) A record of practical work during the year in Clinical Surgery.
(2) A written examination, of a length to be determined by the Professors, and to be judged directly by them, upon the subjects covered by the instruction of the year.

Obstetrics.

A written examination, of a length to be determined by the Professor, and to be judged directly by him, upon the subjects covered by the instruction of the year.

Gynecology.

(1) A record of practical work during the year in Clinical Gynecology.
(2) A written examination, of a length to be determined by the Professor, and to be judged directly by him, upon the subjects covered by the instruction of the year.

Venereal Diseases.

(1) A record of practical work during the year.
(2) A written examination, upon the subjects covered by the instruction of the year, to be conducted and judged by the Professor.

Diseases of the Eye.

(1) A record of practical work during the year.
(2) A written examination upon the subjects covered by the instruction of the year, to be conducted and judged by the Professor.

Diseases of the Ear.

(1) A record of practical work during the year.

(2) A written examination upon the subjects covered by the instruction of the year, to be conducted and judged by the Professor.

No student will be permitted to advance with his class from the third to the fourth year unless he presents satisfactory records of practical work in Pathological Histology, Physical Diagnosis, Clinical Surgery, Clinical Gynecology, Venereal Diseases, Diseases of the Eye, and Diseases of the Ear.

By a satisfactory record is meant a certificate of punctual attendance, unless prevented by illness or unavoidable causes, on the practical courses. These courses can only be taken during the third year, so that they cannot be made up at a later time.

In addition, the student must pass satisfactory written examinations on Materia Medica and Therapeutics, Pathological Histology, Practice of Medicine, Diseases of the Mind and Nervous System, Surgery, Obstetrics, Gynecology, Venereal Diseases, Diseases of the Eye, and Diseases of the Ear.

A student found deficient in only three of the seven departments of Materia Medica and Therapeutics, Pathological Histology, Practice of Medicine, Diseases of the Mind and Nervous System, Surgery, Obstetrics, and Gynecology, and in only two of the three departments of Venereal Diseases, Diseases of the Eye, and Diseases of the Ear, can advance with his class provided that he makes up the five subjects on which he is conditioned before October 10th of the fourth year.

STANDING AT THE END OF THE FOURTH YEAR, AND FINAL EXAMINATIONS.

The standing, in the respective departments, of a student at the end of his fourth year will be based upon the following tests, to be applied by, or under the direction of, the Professor in charge of the department, unless otherwise expressly specified:

Clinical Microscopy.

(1) A record of practical work during the year.

(2) A practical examination in Clinical Microscopy.

(3) A written examination, of a length to be determined by the Professor of Pathology.

The Practice of Medicine.

(1) A record of practical work during the year in Clinical Medicine.

(2) A written examination, of a length to be determined by the Professor, and to be judged directly by him, upon the subjects covered by the instruction of the year.

Diseases of the Mind and Nervous System.

(1) A record of practical work during the year in the diagnosis of nervous diseases.

(2) A written examination, of a length to be determined by the Professor, and to be judged directly by him, upon the subjects covered by the instruction of the year.

The Principles and Practice of Surgery.

(1) A record of practical work during the year in Clinical Surgery.

(2) A record of practical work during the year in Operative Surgery upon the Cadaver.

(3) A written examination, of a length to be determined by the Professors, and to be judged directly by them, upon the subjects covered by the instruction of the year.

Obstetrics.

A record of practical work during the year in Clinical Obstetrics, including attendance upon confinements.

Diseases of Children.

(1) A record of practical work during the year.

(2) A written examination upon the subjects covered by the instruction of the year, to be conducted and judged by the Professor.

Diseases of the Skin.

(1) A record of practical work during the year.

(2) A written examination upon the subjects covered by the instruction of the year, to be conducted and judged by the Professor.

Diseases of the Throat and Nose.

(1) A record of practical work during the year.

(2) A written examination upon the subjects covered by the instruction of the year, to be conducted and judged by the Professor.

Orthopædic Surgery.

(1) A record of practical work during the year.

(2) A written examination upon the subjects covered by the instruction of the year, to be conducted and judged by the Professor.

No student will be recommended for the degree of M.D. unless he shall have presented satisfactory records of practical work during the fourth year in Clinical Microscopy, Clinical Medicine, the Diagnosis of Nervous Diseases, Clinical Surgery, Operative Surgery upon the Cadaver, Diseases of Children, Diseases of the Skin, Diseases of the Throat and Nose, Orthopædic Surgery, and Clinical Obstetrics, including attendance upon confinements. By a satisfactory record is meant a certificate of punctual attendance, unless prevented by illness or unavoidable causes, upon the practical courses.

In addition, a candidate for graduation must pass a satisfactory practical examination in Clinical Microscopy, and satisfactory written examinations in the following subjects of the fourth year, viz.: (1) Practice of Medicine, (2) Diseases of the Mind and Nervous System, (3) Principles and Practice of Surgery, (4) Clinical Microscopy, (5) Diseases of Children, (6) Diseases of the Skin, (7) Diseases of the Throat and Nose, and (8) Orthopædic Surgery.

A student of the fourth year found deficient on examination in the spring in not more than three of the following eight departments, viz.: (1) Practice of

Medicine, (2) Diseases of the Mind and Nervous System, (3) Principles and Practice of Surgery, (4) Clinical Microscopy, (5) Diseases of Children, (6) Diseases of the Skin, (7) Diseases of the Throat and Nose, and (8) Orthopædic Surgery, *provided the three departments in which he has been found deficient do not include more than one of the following departments*, viz. : (1) Practice of Medicine, (2) Diseases of the Mind and Nervous System, (3) Principles and Practice of Surgery, must present himself for re-examination in the following autumn in all the departments in which he failed in the preceding spring. If at such re-examination the student be found deficient in *any* department or departments, he will be obliged to repeat the work of the fourth year in such department or departments, paying a special tuition fee of $50.00 per department, and to present himself for re-examination the following spring in every subject in which he shall have failed. If at such second re-examination he shall fail again in *any* department, he will cease to be considered a candidate for a degree.

A student found deficient in the spring in more than one of the three following departments, viz. : (1) Practice of Medicine, (2) Diseases of the Mind and Nervous System, (3) Principles and Practice of Surgery, or more than three departments altogether, will be obliged to repeat the work of the fourth year in all of the departments in which he shall have been found deficient, and to pay a tuition fee of $50.00 per department.

Such a student will be required to present himself for re-examination the following spring, in every subject in which he shall have failed. If at such re-examination he shall fail again in any department or departments, he must be re-examined therein the following autumn. If at such re-examination he shall again fail in *any* department, he will cease to be considered a candidate for a degree.

REQUIREMENTS FOR GRADUATION

Every candidate before admission to the degree of M.D. will be required :

1. To present satisfactory evidence, as required by law, of good moral character, and of having attained the age of twenty-one years.

2. To present evidence of having complied with the requirements for admission.

3. To have attained to satisfactory standing in the required studies of the four years of the curriculum.

4. A candidate who shall have been admitted to advanced standing will be required to have spent not less than four academic years at the studies referred to in the clause next preceding ; and to have complied successfully with the requirements for admission to advanced standing.

No two academic years which shall have begun during the same calendar year will be held to satisfy the requirements of the above clause.

THE DEGREE OF MASTER OF ARTS

The degree of Master of Arts may be conferred upon students holding college degrees, who shall have completed with distinction the entire course of the School of Medicine, provided that in each case the candidate presents a satisfac-

tory dissertation, and that at least a part of the extra work required of him for the degree of Master of Arts be taken under the direction of the Faculty of Philosophy, Political Science, or Pure Science, to the extent of one minor course, for not less than one year.

Students in the School of Medicine who are candidates for the degree of Master of Arts, in accordance with the above paragraph, are subject to the regulations of the Faculty of Philosophy, Political Science, or Pure Science, under which the extra work is taken, and which finally recommends the candidates for the degree. Such students should apply to the Dean of the same faculty for a registration-book.

HOSPITAL APPOINTMENTS

By a resolution of the Commissioners of Public Charities the faculty of this college is entitled to nominate for appointment by the Commissioners, after competitive examination in the college, its proportion of members of the House Staff of Bellevue Hospital; such members to be attached to that division of the said hospital which has been assigned to the care of the college.

Four nominations, two medical and two surgical, are made each year by the college from among its graduates, under the above resolution.

One medical and one surgical assistant go on duty upon July 1st; in the same way one medical and one surgical assistant upon January 1st.

The choice as to character of service, and the time of beginning the same, is given to the successful candidates in the order of their merit.

The surgical nominees all serve the hospital for six months in each of the four grades of ambulance surgeon, junior assistant, senior assistant, and house surgeon; each one having thus a total of two years' experience on the "House Staff."

The medical nominees serve each in the three grades of junior assistant, senior assistant, and house physician.

Similar positions are filled twice in each year, by public competitive examinations, open to graduates of this college, in the following institutions:

The "non-collegiate" division of Bellevue Hospital; the New York Hospital; the Roosevelt Hospital; St. Luke's Hospital; the City Hospital; Blackwell's Island; the Alms-House Hospitals; the Work-House Hospital; St. Vincent's Hospital; St. Francis' Hospital; the German Hospital; the Mount Sinai Hospital; the Presbyterian Hospital; the Woman's Hospital; the Brooklyn Hospital; St. Catherine's Hospital, Brooklyn; St. Peter's Hospital, Brooklyn; the King's County Hospital, Flatbush, L. I.

ALONZO CLARK SCHOLARSHIP

See page 27.

FELLOWSHIPS

For the University Fellowships, see page 20.
For the Alumni Association Fellowships, see page 27.

PRIZES

For the Harsen Prizes for clinical reports, see page 27.
For the Harsen Prizes for proficiency at examination, see page 27.
For the Alumni Association Prize, see page 28.
For the Cartwright Prize, see page 28.
For the Stevens Triennial Prize, see page 28.
For the Joseph Mather Smith Prize, see page 29.

REQUIREMENTS FOR LICENSE TO PRACTICE MEDICINE IN NEW YORK STATE

All requirements for admission should be completed at least one week before examinations.—They are as follows:

1. Evidence that applicant is more than 21 years of age (Form 1).

2. Certificate of moral character from not less than two physicians in good standing (Form 2).

3. Evidence that applicant has the general education required, preliminary to receiving the degree of bachelor or doctor of medicine in this state (medical-student certificate. See examination handbook).

4. Evidence that applicant has studied medicine not less than four full school years of at least nine months each, in four different calendar years in a medical school registered as maintaining at the time a satisfactory standard. New York medical schools and New York medical students shall not be discriminated against by the registration of any medical school out of the state, whose minimum graduation standard is less than that fixed by statute for New York medical schools.

The increase in the required course of medical study from three to four years does not take effect till January 1, 1898, and does not apply to students who matriculated before that date and received the degree of M.D. before January 1, 1902 (Form 1).

First exemption: "The regents may in their discretion accept as the equivalent for any part of the third and fourth requirement, evidence of five or more years' reputable practice of medicine, provided that such substitution be specified in the license."

5. Evidence that applicant "has received the degree of bachelor or doctor of medicine from some registered medical school, or a diploma or license conferring full right to practice medicine in some foreign country" (Form 3 on original credentials).

6. The candidate must pass examinations in anatomy, physiology and hygiene, chemistry, surgery, obstetrics, pathology and diagnosis, therapeutics, practice, and materia medica. The questions "shall be the same for all candidates, except that in therapeutics, practice, and materia medica all the questions submitted to any candidate shall be chosen from those prepared by the board selected by that candidate, and shall be in harmony with the tenets of that school as determined by its state board of medical examiners."

Second exemption: "Applicants examined and licensed by other state examining boards registered by the regents as maintaining standards not lower than

those provided by this article, and applicants who matriculated in a New York state medical school before June 5, 1890, and who received the degree M.D. from a registered medical school before August 1, 1895, may without further examination, on payment of $10 to the regents and on submitting such evidence as they may require, receive from them an indorsement of their licenses or diplomas, conferring all rights and privileges of a regents' license issued after examination."

7. A fee of $25, payable in advance.

Medical Examinations

Examinations for license to practise medicine in this state will be held as follows:

DATES.	PLACES.
1898.	
Jan. 25–28	New York.
April 5–8	Albany.
May 17–20	Syracuse.
June 14–17	Buffalo.
Sept. 27-30	Each candidate is notified as to exact place.

Address all communications concerning license examinations to *Examination Department, University of the State of New York, Albany, N. Y.*

REGISTER OF STUDENTS

FOURTH YEAR CLASS

Aquaro, John.....New York
Arbuthnot, Thomas Shaw, A.B., *Yale*.....Pittsburgh, Pa.
Barshell, Samuel.....New York
Benjamin, Maxwell.....New York
Bero, Edward John.....New York
Blackmar, John Stanton.....Norwich, Conn.
Blake, James Eddy, B. S., *N. Y. University*.....Brooklyn
Briody, James Francis.....Paterson, N. J.
Brown, Edward Manning, Ph.B., *Yale*,.....Springfield, Mass.
Buckley, Charles Frederick, A.B., *Columbia*.....Brooklyn
Burgess, Maynard Gooding.....Havana, Cuba
Busby, Archibald Henry.....Rochester, N. Y.
Calhoun, William Caldwell.....New York
Campbell, Clarence Wellington.....New York
Carleton, Spencer, A.B., *Columbia*.....New York
Clark, James Bayard.....Elizabeth, N. J.
Clarke, Arthur Vernon.....St. Andrews, N. B., Can.
Clarke, Henry Elisha.....Newburgh, N. Y.
Cohen, Martin.....New York
Cole, Lewis Gregory.....Brooklyn
Collins, John James, A.B., *Holy Cross*.....New York
Conover, John Hamilton Potter, A.B., *Columbia*.....South Amboy, N. J.
Cory, Horace Cortelyou.....Newark, N. J.
Cotter, John James.....New Bedford, Mass.
Cox, Rowland, Jr.....New York
Dayton, Hughes, Ph.B., *Yale*.....New York
Dorman, Franklin Abbott, A.B., *Harvard*.....Upper Montclair, N. J.
Doughty, Isaac Linton, Jr.....Brooklyn
Douglas, John, B.S., *N. Y. City College*.....New York
Durning, Charles Francis, A.B., *Holy Cross*.....New York
Dyer, Joseph Osterman, Ph.B., *Yale ;* LL.B., *Tulane University*,
Galveston, Texas
Earl, William Petry.....Herkimer, N. Y.
Edgerton, Francis Cruger, B.S., *Trinity*.....Middletown, Conn.
Eising, Eugene Harold, B.S., *N. Y. City College*.....New York
Ellis, Herbert Henry.....Ithaca, N. Y.

Fitzgerald, Charles Francis, A.B., *Holy Cross*.....New York
Fogarty, Joseph Norman.....Key West, Florida
Fox, George Howard, A.B., *Yale*.....New York
Frankle, Benjamin Butler.....Denver, Colo.
Franklin, Charles Moore, A.B., *University of Alabama*...Union Spring, Ala.
Gardner, Arthur Henry.....Springfield, Mass.
Goodfriend, Henry.....New York
Goodridge, Malcolm, A.B., *Princeton*.....Flushing, N. Y.
Graeser, Herman Rudolph Alexander, Ph.G., *College of Pharmacy*..New York
Green, Nathan Williams, A.B., *Yale*.....New York
Gross, Moritz.....Worcester, Mass.
Haas, Leopold Frederick William, B.S., *N. Y. City College*....Jersey City, N. J.
Hatton, Henry Clinton.....Brooklyn
Held, Ruben Johnson.....New York
Herrick, William Post. A.M., *Princeton*.....New York
Hewlett, Harold Edmonds, Ph.B., *Yale*.....Babylon, N. Y.
Hinsdale, Roy Seymour, A.B., *Amherst*.....Antwerp, N. Y.
Hubbard, Ernest Valentine, A.B., A.M., *Columbia*.....New York
Hunt, Charles Frederick.....Yonkers, N. Y.
Ivie, Charles William, A.B., *St. Stephens;* A.M., *Columbia*.....Brooklyn
Jackson, Elias Simeon.....New York
Janeway, Henry Harrington, A.B., *Rutgers*.....New Brunswick, N. J.
Jenks, Ernest Potter, A.B., *Brown*.....New York
Johnson, Edward West.....Keene, N. H.
Judkowitz, Herman.....New York
Kellogg, Kenneth Evernghim.....Hartford, Conn.
Kelly, Henry Thomas.....New York
Kenyon, James Henry, B.S., *Princeton*.....Waverly, N. Y.
Keppler, Carl Richard.....Elizabeth, N. J.
Kessler, Eugene George, Ph.G., *College of Pharmacy*.....New York
Kline, Walter Leo, A.B., *Otterbein*.....Dayton, O.
Klotz, Walter Carl.....New York
Kopetzky, Samuel Joseph.....New York
Kreuder, Henry, Ph.G., *College of Pharmacy*.....New York
Lange, Christian Christoph Andreas, B.S., *Dalhousie*.....Brooklyn
Layman, Daniel Wunderlich, B.S., *Butler*.....Irvington, Ind.
Lederman, Emanuel David.....New York
Lee, Burton James, Ph.B., *Yale*.....New Haven, Conn.
Lee, Harry Mower.....New London, Conn.
Lee, Henry Thomas, Jr.....St. Paul, Minn.
Leshure, John.....New York
Lindheim, George Washington.....New York
Logan, John Othello.....New York
Long, William Henry, Jr.....Somerville, N. J.
Love, Lionel Hartsfield.....Wilmington, N. C.
Low, Joseph Thompkins, Jr., B.S., *Princeton*.....New York
Lyon, Palmer Heath.....New York

MacGruer, Henry Alexander.....Ogdensburg, N. Y.
Macklin, Walter Fullarton.....New York
Maguire, Edward O'Reilly.....Derby, Conn.
McCarthy, Edward John.....New Haven, Conn.
McLeod, Harlow Comstock.....Brooklyn
McWhorter, John English.....Nanuet, N. Y.
Merrell, Howard Valentine.....South Branch, N. J.
Meyer, Leo Bernard A.B., *N. Y. City College*.....New York
Michaelis, Alfred, A.B., *N. Y. City College*.....New York
Miller, Albert Hersey, A.B., *Bates*.....Lewiston, Me.
Miller, Guy Bryan, A.B., *Yale*.....New Rochelle, N. Y.
Mittendorf, William Elphinstone Keith.....New York
Morgan, Browne.....Glen Ridge, N. J.
Moseley, Henry Perkins, A.B., *Yale*.....New York
Müller, Emil Alfred.....New York
Nolte, Henry Clarence.....Milwaukee, Wis.
O'Connell, Joseph Henry, A.B., *Holy Cross*.....New York
Pedersen, Victor Cox, A.B., A.M., *Trinity*.....New York
Pelton, Henry Hubbard, A.B., A.M., *Trinity*.....Middletown, Conn.
Pendleton, Judson Philbrook.....Ilesboro, Me.
Probasco, Edgar Burton.....Rochester, N. Y.
Probasco, Norman Hayes.....Plainfield, N. J.
Pyle, Immanuel.....Jersey City, N. J.
Roberts, Dudley de Vore.....Newark, N. J.
Robinson, Joseph, Jr.....Norwich, Conn.
Roff, Augustine Ward.....Newark, N. J.
Rosenberg, Edward Aaron.....New York
Ruhl, Henry Clay, A.B., *N. Y. City College*.....New York
Rundquist, Emil Albin, B.S., *N. Y. City College*.....New York
Sabel, Stanley Owen.....Bowling Green, Ky.
Sabine, Philip Schieffelin, A.B., *Princeton*.....New York
Satterlee, George Reese, A.B., *Columbia*.....New York
Saxe, George Alexander.....New York
Schwarz, Herman.....New York
Shields, John Aloysius.....Brooklyn
Sicard, Montgomery Hunt, B.S., *Princeton*.....New York
Smith, Letchworth, A.B., *Yale*.....New York
Solley, John Beach, Jr., A.B., *Yale*.....New York
Stagg, Frank Munson.....Paterson, N. J.
Stock, Henry, B.S., *N. Y. City College*.....New York
Strauss, Israel, A.B., *Brown*.....Pawtucket, R. I.
Swanick, James Robert.....Saratoga Springs, N. Y.
Tannenbaum, Samuel Aaron.....New York
Taylor, John Mortimer, A.B., *Univ. of Rochester*.....Holley, N. Y.
Thorner, Moses.....New York
Tousey, Ralph, A.B., *Yale*.....New York
Turner, Leslie Allin.....Brooklyn

Turnure, Percy Rivington, A.B., *Harvard*.....New York
Van Patten, Philip Schuyler.....New York
Vibbert, William Welsh, A.B., A.M., *Trinity*.....New York
Wallace, Charlton, A.B., *Kentucky*.....Lexington, Ky.
Waterhouse, Ernest Coniston, A.B., *Princeton*.....Honolulu, Hawaii
Waugh, Justin Miner, Jr., Ph.B., *Oberlin*.....Mansfield, O.
Wettengel, Walter.....New York
Wheeler, David Everett, A.B., *Columbia*.....New York
Williams, Charles Mallory, A.B., *Brooklyn Polytechnic;*
Ph.B., *Yale*, New York
Williamson, Henry Chrystie.....New York
Wolbarst, Abraham Leo.....New York
Woolsey, William Cavan.....Jersey City, N. J.
Wurthman, John Henry, Ph.G., *College of Pharmacy*.....New York
Young, Roy Demas, Phar. M., *University of Michigan;*
B.S., *Harvard*, Adams, N. Y.

Fourth Year Class..... 143

THIRD YEAR CLASS

Abbe, Truman, A.B., *Harvard*.....New York
Addoms, Lewis Paddock.....Brooklyn
Addy, Arthur Rockwell, A.B., *Marietta*.....New York
Adler, Maximilian Louis, B.S., *N. Y. City College*.....New York
Allée, William Hanford, Jr.....Brooklyn
Antony, Charles Leonard.....New York
Appel, Hermann Nehemiah.....Brooklyn
Armstrong, William Buckingham.....Atlanta, Ga.
Aronson, Edward Aaron.....New York
Bailey, Theodorus, B.S., *Princeton*.....New York
Baird, Addison Waddell.....New York
Banks, Wesley Tarver, A.B., *Emory*.....Enon, Ala.
Barclay, Harold.....New York
Barnes, George Edward, A.B., *Cornell*.....Herkimer, N. Y.
Barnett, Edward Leroy, B.S., *St. Lawrence*.....Brushton, N. Y.
Barry, Thomas Joseph.....New York
Bastedo, Walter Arthur, Ph.G., *College of Pharmacy*, Newmarket, Ont., Can.
Beer, Edwin, A.B., *Columbia*.....New York
Bennett, Reginald Sidney.....Tinton Falls, N. J.
Birckhead, James, A.B., *Trinity*.....New York
Bleick, Theodore Edward.....Newark, N. J.
Bodkin, Dominic George.....Brooklyn
Boyd, August Samuel.....New York
Bradner, Frederick Clark, A.B., *Princeton*.....Warwick, N. Y.
Brady, Frederick Luther.....New York
Brandies, Julian Walter, B.S., *N. Y. City College*.....New York
Bryan, Robert Coalter.....Richmond, Va.

Bullwinkle, Franklin ..... Brooklyn
Campbell, Horace ..... College Park, Cal.
Carhart, George Arthur, B.S., *Univ. of Wisconsin* ..... Milwaukee, Wis.
Cherry, William Samuel, A.B., A.M., *Columbia* ..... New York
Clark, Abram Schuyler, B.S., *Rutgers* ..... New Brunswick, N. J.
Clarke, William Cogswell ..... Tenafly, N. J.
Crawford, William Barron ..... Savannah, Ga.
Cummings, John Joseph ..... Worcester, Mass.
Davidson, John Mac Bain ..... Brooklyn
Davis, Fellowes, Jr ..... New York
Dillingberg, Joseph Solomon, B.S., *N. Y. City College* ..... New York
Donovan, Patrick George ..... Townsend, N. Y.
Downs, Augustus Sherman ..... Saratoga, N. Y.
Dryfoos, Arthur David, A.B., *N. Y. City College* ..... New York
Eakins, Olin Martin ..... Paterson, N. J.
Emerson, Haven, A.B., *Harvard* ..... New York
Fitch, Charles Wilmer, A.B., *Williams* ..... Mooers, N. Y.
Floyd, Rolfe, A.B., *Harvard* ..... Mastic, N. Y.
Foote, Sherman Knevals, A.B., *Yale* ..... New York
Furman, Reginald, A.B., *Harvard* ..... New York
George, Frederick Siebert ..... Seneca Falls, N. Y.
Getman, John Edgar ..... Gloversville, N. Y.
Geyer, Harold Carl, A.B., *Columbia* ..... New York
Gilmour, Andrew James, Ph.B., *Yale* ..... Fulton, N. Y.
Gould, Everett Willoughby, A.B., *Columbia* ..... Watertown, N. Y.
Gray, Alfred William, A.B., *Univ. of Wisconsin* ..... Milwaukee, Wis.
Gross, John Conrad ..... New York
Hailey, Walter Penrhyn ..... Savanna, Ind. Terr.
Hall, Myron Foster ..... Elmira, N. Y.
Hanan, James Taylor ..... Waterford, Conn.
Haviland, Reed Ferris ..... Pawling, N. Y.
Holden, Edgar, Jr., A.B., *Princeton* ..... Newark, N. J.
Honnet, Joseph Harry ..... Wilmington, N. C.
Howe, Henry Newell ..... Monson, Mass.
Hughes, Frederick John ..... Plainfield, N. J.
Hughes, John Lawrence ..... New York
Humpstone, Oliver Paul ..... Brooklyn
Hyams, Benno ..... New York
Ingling, Harry Warrington ..... Freehold, N. J.
Jackson, Joseph Morris ..... Allegheny, Pa.
Jackson, Reginald Henry ..... Madison, Wis.
Jacobs, William Ketchum ..... Brooklyn
Jennings, John Edward ..... Brooklyn
Jones, Franklin Miter ..... New York
Kane, Charles Joseph, A.B., *Fordham* ..... Paterson, N. J.
Keschner, Moses ..... New York
Knight, Frank Henry ..... Brooklyn

Kosmak, George William, A.B., *Columbia*.....New York
Kurrus, John.....Long Branch, N. J.
Lawrence, William Henry, Jr.....Summit, N. J.
Lesser, Mozart Monae.....New York
Line, Arthur Maxwell, A.B., *Harvard*.....New York
Livengood, Horace Rutherford.....Elizabeth, N. J.
Loughran, Robert Livingston, A.B., *Princeton*.....Kingston, N. Y.
Lowenstein, Victor.....New York
Lyman, Henry Stoddard, A.B., *Yale*.....Omaha, Neb.
Lynn, Charles Willard.....New York
MacAlister, William Wallace.....Paterson, N. J.
McCafferty, John Aloysius, A.B., *Manhattan*.....New York
McCastline, Robert.....New York
McDonald, William, Jr., B.P., *Brown*.....Albany, N. Y.
McKee, Fred Lyman.....New York
Mendel, Edward Marcus, A.B., *Harvard*.....New York
Miller, Edward Ira.....Newark, N. J.
Miller, James Alexander, A.B., A.M., *Princeton*.....Roselle, N. J.
Moss, L. Howard.....Brantford, Can.
Myrick, Frank Worman.....Binghamton, N. Y.
Neresheimer, Frederick Emil.....New York
Nesbitt, Robert Henry.....Wheeling, W. Va.
Nettleton, Irving La Field.....Bridgeport, Conn.
Noble, Robert Ernest, M.S., *Alabama Polytechnic Inst.*.....Anniston, Ala.
O'Brien, Francis Jeremiah, A.B., *Univ. of Toronto*.....Rochester, N. Y.
O'Connor, Charles George, A.B., *Manhattan*.....Brooklyn
O'Connor, James Henry, A.B., *Holy Cross*.....North Chelsford, Mass.
Ogilvie, James, A.B., *Williams*.....Lawrence, Mass.
Osgood, Alfred Townsend, A.B., *Yale*.....Rochester, N. Y.
Payne, William Anderson.....Chatham, Va.
Pierson, Frederick Harrison, Jr., B.S., *Rutgers*.....Elizabeth, N. J.
Pollard, Charles Whitney, A.B., *Dartmouth*.....New York
Pool, Eugene Hillhouse, A.B., *Harvard*.....New York
Potter, Palmer Augustus, B.S., *Amherst*.....New York
Pulsifer, Tappan Chase, A.B., *Bates*.....Auburn, Me.
Rambaud, George Gibier.....New York
Roemer, William Benjamin.....New Hartford, N. Y.
Rosenberg, Maurice.....New York
Rosenwasser, Charles Adolph.....Newark, N. J.
Russell, Tracy George, A.B., *Leland Stanford*.....San Francisco, Cal.
Rutz, Anthony Alexander, A.B., A.M., *St Francis Xavier*.....Brooklyn
Ryder, George Hope, A.B., *Yale*.....Plainfield, N. J.
Salant, William, B.S., *Cornell*.....New York
Schnecker, William Augustus Muhlenberg.....New York
Scofield, Charles Edward.....Brooklyn
Scully, Daniel Joseph, Jr.....Brooklyn
Severino, Joseph Minnelli.....Astoria, N. Y.

Shipley, Alfred Edward.....Brooklyn
Shirriffs, Russell Aber.....Elizabeth, N. J.
Shrier, Albert Franklin.....New York
Simon, Theodore William.....New York
Sloan, Thomas George.....New Haven, Conn.
Smith, John Archibald.....Peekskill, N. Y.
Spencer, Frederick Hallett.....Waverly, N. Y.
Squire, Amos Osborne.....Cold Spring, N. Y.
Stark, Meyer Maurice, A.B., *N. Y. City College*.....New York
Stern, Abram Richard.....New York
Stevenson, Robert.....New Bridge, N. J.
Stone, Squire Wilbert.....New York
Streeter, George Linius, A.B., *Union*.....Johnstown, N. Y.
Sutton, Edward Forrester Holden, A.B., *Princeton*.....New York
Tierney, Miles Joseph, A.B., A.M., *St. Francis Xavier*, *Georgetown*, New York
Tompkins, Frank Edward.....New York
Trenchard-Wood, Alfred, A.B., A.M., *St. Francis Xavier*.....New York
Ullman, Albert Eckhardt.....New York
Virgin, Frederic Oakman, A.B., *Columbia*.....New York
Wadhams, Raymond Lynde, A.B., *Princeton*.....Wilkesbarre, Pa.
Waechter, Adolf Louis.....New York
Wainwright, Jonathan Mayhew, A.B., *Trinity*.....Hartford, Conn.
Wakefield, Fred Symonds, A.B., *Bates*.....Lewiston, Me.
Warren, George Linden.....Newark, N. J.
Watson, Oscar, A.B., A.M., *Univ. of New Brunswick*.....New York
Wheeler, Richard Kimble, A.B., *Univ. of Rochester*.....Rochester, N. Y.
Whitacre, Marion, B.Sc., *Ohio State*.....Morrow, O.
Williams, Linsly Rudd, A.B., *Princeton*.....New York
Wilson, Claude Lucas, A.B., *Wesleyan*.....Middletown, Conn.
Zabriskie, Francis Nicoll, A.B., *Princeton*.....New York

Third Year Class.....151

SECOND YEAR CLASS

Abbott, Theodore Jacob, A.B., *Harvard*.....Cornwall, N. Y.
Adams, Charles Baker, A.B., *Amherst*.....Amherst, Mass.
Adler, Marian Samuel.....New York
Agatstein, Sigmund.....New York
Alexander, David Esterbrook.....New York
Allen, William Thomas.....Brooklyn
Alsberg, Carl Lucas, A.B., *Columbia*.....New York
Ballin, Milton Julius, Ph.B., *Yale*.....New York
Bamberger, Raymond Sidney, A.B., *Louisville High School*.....New York
Bandler, Leon.....New York
Banta, Edward Woodruff.....Brooklyn
Barton, Francis William, B.S., *Notre Dame*.....Danville, Ill.
Bayles, Howard.....White Plains, N. Y

Bebee, Edwin Lorendus, A.B., *Amherst*.....Westfield, N. Y.
Bernstein, Eugene Paul, B.S., *N. Y. City College*.....New York
Bieber, Joseph.....New York
Bingham, Arthur Walter, A.B., *Yale*.....West Cornwall, Vt.
Black, John Fielding James, V.S., *Ontario*.....Dublin, Ireland
Blumenthal, Jules Leon.....New York
Breckwedel, Harry Benjamin.....New York
Brill, Abraham.....New York
Brinsmade, Daniel Bradley, A.B., *Yale*.....Washington, Conn.
Brooke, William Wallace.....Bayonne, N. J.
Brown, Thomas Evans Westman, B.S., *University of North Carolina*,
Asheville, N. C.
Byington, Roderick, Jr., B.S., *Princeton*.....New York
Cassebeer, Henry Arthur, Jr., A.B., *Harvard*.....New York
Celler, Herbert Louis, A.B., *Columbia*.....New York
Charlton, Herbert Richard.....Mount Vernon, N. Y.
Cochran, Guy Hunt, A.B., *Leland Stanford*.....Los Angeles, Cal.
Cochrane, Frank Lawrence.....Brooklyn
Connell, Edward Joseph, Jr., A.B., *Manhattan*.....New York
Crampton, Charles Ward.....New York
Crane, Claude Granville.....Middletown, N. Y.
Cronin, William.....New London, Conn.
Cross, Frank Bethel.....New York
Cunningham, Joseph Atwood, A.B., *N. Y. City College*.....Long Island
Darling, Everett Field, B.S., *Worcester Tech*.. .....Mendon, Mass.
Deely, George Edward, A.B., *Williams*.....Lee, Mass.
Dempewolff, August Fred.....New York
Ditman, Norman Edward, Ph.B., *Yale*.....Englewood, N. J.
Dodd, Edward Lewis, A.B., *Princeton*.....Newark, N. J.
Donohue, Francis Bernard, A.B., *Seton Hall*.....Paterson, N. J.
Dorman, Harry Gaylord, A.B., *Harvard*.....Upper Montclair, N. J.
Driscoll, Daniel Michael.....Norwich, Conn.
Duffield, Francis, A.B., *Harvard*.....Detroit, Mich.
Dwyer, Joseph William.....Garfield, N. J.
Everitt, Chauncey Valentine.....Jersey City, N. J.
Fahnestock, Clarence. .....New York
Fahnestock, Ernest.....New York
Fendrich, Adam Edward.....New York
Fowler, Edmund Prince.....New York
Frank, Robert Tilden, A.B., *Harvard*.....New York
Frissell, Lewis Fox, A.B., A.M., *Yale*.....New York
Fry, Howard James.....New York
Funk, John Arthur, A.B., *New York University*..West New Brighton, N. Y.
Gershel, Milton, B.S., *N. Y. City College*.....New York
Gieschen, Albert Henry, Ph.G., *College of Pharmacy*.....New York
Goodman, Marcus.....New York
Graham, James Frank.....Memphis, Tenn.

Grant, James Edward.....Hamilton, N. Y.
Grausman, Philip Michael, A.B., *Citadel Academy*.....Raleigh, N. C.
Green, Stith Gordon, A.B., *Millsop College*.....Jackson, Miss.
Halsey, Robert Hurtin, A.B., *Columbia*.....Astoria, N. Y.
Hanscom, Howard Chapin, A.B., *Colby*.....New York
Hayt, Ralph Agustus.....Fishkill, N. Y.
Henriquez, Charles Louis, B.S., *Seton Hall*.....New York
Hensel, Otto, Ph.G., *College of Pharmacy*.....New York
Holmes, Goerge Jenkinson.....West Summit, N. J.
Hooker, Ransom Spaford, B.L., *Hobart*.....New York
Hoole, Lester Page, A.B., *Yale*.....Brooklyn
Horowitz, Jacob.....New York
Horsford, Frederick Charles, Ph.G., *College of Pharmacy*.....New York
Hubschmitt, Adam Wendell, A.B., *N. Y. City College*.....New York
Hutton, Edward Hyatt, A.B., *Williams*.....Corning, N. Y.
Hynes, Edward Gibson, A.B., A.M., *St. Francis Xavier*.....Brooklyn
Ireland, William de Forest.....New York
Jacoby, Leo.....New York
Jarmulowsky, Harry.....New York
Jedel, Meyer.....Newark, N. J.
Johnson, Philip Van Kuren.....Denver, Colo.
Jones, John Morgan.....Jersey City, N. J.
Jones, Mortimer Dunham.....Far Rockaway, N. Y.
Kahn, Samuel.....New York
Kelly, Aquinas Sarsfield.....New York
Kennedy, Thomas Joyce Lenox.....New York
Kirkman, Leroy Gresham, A.B., *Princeton*.....Port Jervis, N. Y.
Knowles, Frederick.....New York
Knudsen, Arthur Sinclair, A.B., *Harvard*.....Honolulu, Hawaiian Islands
Koronefsky, Jacob.....New York
Krebs, Maurice Hill.....New York
Krug, Ernest Frederick.....Cleveland, O.
Landes, Edwin Walter.....Newark, N. J.
Lathrop, Samuel Salisbury.....Norwich, Conn.
Lebhar, Norman Jacob.....New York
Levy, Edward.....New York
Lobenstine, Ralph Waldo, A.B., *Yale*.....New York
Love, Leslie Clifford, A.B., *Princeton*.....Montclair, N. J.
Lyle, Henry Hamilton Moore.....Hamilton, Canada
Macdougall, Geoffrey Westrope.....Ottawa, Canada
Mantinband, Jacob.....New York
Margulies, Irving.....New York
Margulis, Jacob.....New York
Marsh, Elias Joseph, Jr., A.B., *Harvard*.....Paterson, N. J.
Martin, Thomas Aloysius, B.S., *N. Y. City College*.....New York
Martin, Urban Francis, B.S., *N. Y. City College*, West New Brighton, N. Y.
Mason, Lucius Julius, B.L.....New York

McFarland, William Landram.....New York
McKenzie, Edward Townsend, A.B., *New York University*...Rahway, N. J.
McLaughlin, Andrew Joseph, Jr.....Norwich, Conn.
Menk, Paul Ernest.....Newark, N. J.
Miller, Franklyn Henry.....Brooklyn
Millspaugh, Willard Pierrepont, A.B., *Williams*.....Richmond, N. Y.
Mitchell, Robert Jack.....New York
Montgomery, Walter Clark.....New York
Moore, Clifford Colgate.....Brooklyn
Morse, George Westlake.....Elmira, N. Y.
Moschcowitz, Eli, A.B., *N. Y. City College*..... New York
Mund, Conrad, A.B., *N. Y. City College*.....New York
Navoni, James.....New York
Noonan, Cornelius James.....Brooklyn
North, Charles Edward, A.B., *Wesleyan*.....Montclair, N. J.
O'Dwyer, Joseph.....New York
Orgel, David Henry.....New York
Pakelnishky, Maurice, Ph.B., *Syracuse*.....Syracuse, N. Y.
Pannaci, Charles Emonual Eugene.....Sea Bright, N. J.
Park, William.....New York
Pascual, William Vincent.....Brooklyn
Patterson, Henry Stuart, A.B., *Williams*.....New York
Pearson, Charles Edward.....New Brighton, N. Y.
Pelgram, George Oscar.....New York
Pindar, Frederick Standish.....Middleburg, N. Y.
Pittman, John Green, A.B., *Univ. of Georgia*.....Thomasville, Ga.
Plotz, Isaac Israel.....New York
Polatsak, Henry Benjamin.....New York
Porter, Elisha Pender, A.B., *Davidson*.....Rocky Point, N. C.
Quel, Barnett.....New York
Quinby, William O'Gorman.....Newark, N. J.
Rabinovitz, Meyer.....New York
Reichers, George Henry.....Brooklyn
Reinsberg, Charles Hermann, A.M., *Princeton*.....New York
Reiss, Henry.....New York
Reynolds, Harry Badger, A.B., *Leland Stanford*.....Oakland, Cal.
Roos, Lester Laurens.....New York
Rosensohn, William, A.B., *N. Y. City College*.....New York
Rowe, Norman Leslie, Jr.....Jersey City, N. J.
Satterlee, Henry Suydam, A.B., *Harvard*.....New York
Saunders, Norman Brown.....Forestville, N. Y.
Seelig, Major Gabriel, A.B., *Harvard*.....Helena, Ark.
Shanahan, Robert Henderson.....Tarrytown, N. Y.
Shangle, Milton Allison.....Roselle, N. J.
Smith, Fred Willard.....Richfield Springs, N. Y.
Smith, Harry Victor Aloysius.....Jersey City, N. J.
Smith, Philip.....Scranton, Pa.

Spalding, Alfred Baker, A.B., *Leland Stanford*.....Atchison, Kan.
Stern, Max.....Newark, N. J.
Stewart, James Fleury.....Cold Spring Harbor, N. Y.
Stradling, Frank.....Hamilton, N. Y.
Todd, Luther Anson.....Atchison, Kan.
Toering, Albert John.....Newark, N. J.
Tomlinson, Rolland Davis.....Plainfield, N. J.
Trudeau, Edward Livingston, Jr., A.B., *Yale*.....Saranac Lake, N. Y.
Uhl, Carl Manfred, A.B., *Columbia*.....New York
Valentine, Morris Crawford, A.B., *N. Y. City College*.....New York
Van Der Clock, Cornelius.....Paterson, N. J.
Van Doren, George Bickford, A.B., *Brown*.....Chaumont, N. Y.
Van Vranken, Albert Bensen, Ph.B., *Union*.....Brooklyn
Vogel, Karl Max, Ph.G., *College of Pharmacy*.....New York
Vreeland, Clarence Le Fever.....Jersey City, N. J.
Walker, Isaac Leander.....Waverly, N. Y.
Washburn, Philip Carter, A.B., *Trinity*.....Hartford, Conn.
Wason, David Boughton.....Port Richmond, N. Y.
Watson, Elbert Lycurgus.....Newport, Ark.
Weber, Leonard Gruner.....New York
Weed, Vernooy Wayland.....Brooklyn
Weil, Richard, A.B., *Columbia*.....New York
Weinstein, Julius William .....New York
Weiss, Louis.....Newark, N. J.
Weisse, Faneuil Suydam, A.B., *Columbia*.....New York
Welch, John Edgar, A.B., *Wesleyan*.....Bloomington, Ill.
Wells, Jonathan Godfrey.....Southport, Conn.
Wheeler, William Louis, B.S., *Colgate*.....New York
White, John Francis.....Rome, N. Y.
Whitefield, William Brown .....Paducah, Ky.
Whitenack, Miller Royal, B.S., *Rutgers*.....Newark, N. J.
Wilson, Arthur Starkey.....New York
Wilson, Edward Earl.....Dallas, Texas
Wilson, William Caldwell.....Blossburg, Pa.
Winchester, Walter Henry.....Warren, Minn.
Winter, Allen Lawrence.....Bloomington, Ill.

Second Year Class.....189

FIRST YEAR CLASS

Adelsohn, Jonas.....New York
Alexander, Alexander John Aitcheson, A.B., *Princeton*....Spring Station, Ky.
Alter, Julius.....New York
Andrews, Barton Foote.....Plantsville, Conn.
Applegate, Wilson Hunt .....Hightstown, N. J.
Bainton, Joseph Hector, A.B., *St. Francis Xavier* .....New York
Baker, John Lockwood.....Brooklyn
Bang, Dean Cleaveland.....Brattleboro, Vt.

Bauman, Louis ..... New York
Benedict, Alfred Chapman, B.S., *N. Y. University*..... New York
Beveridge, James Wallace..... New Rochelle, N. Y.
Bill, Philip Worcester, Ph.B., *Yale*..... Bridgeport, Conn.
Bissell, Philip, A.B., *Columbia*..... New York
Bliss, Robert Franklin..... Brooklyn
Blue, John Howard, B.S., *Univ. of Alabama* ..... Montgomery, Ala.
Bohm, Oscar Henry..... Neperan, N. Y.
Bolduan, Charles Frederick, Ph.G., *College of Pharmacy*..... Brooklyn
Bookman, Arthur, A.B., *Columbia*..... New York
Boyd, Edward Armstrong..... New York
Britenstool, Harry ..... Rochester, N. Y.
Brophy, Wm. Augustine..... Clifton, N. Y.
Bryant, Robert Rindell..... High Bridge, N. J.
Bubb, Harry Agnew..... Williamsport, Pa.
Buchtel, Frost Craft..... East Orange, N. J.
Buerger, Leo, A.B., *N. Y. City College*..... New York
Buffington, Ralph Edward..... Short Hills, N. J.
Cady, Theodore Wood, Ph.B., *Cornell*..... Plattsburg, N.Y.
Cairns, Douglas Walker..... New York
Callan, Harold Augustine..... Yonkers, N. Y.
Carpenter, John Neilson, Jr., B.S., *Rutgers*..... New Brunswick, N. J.
Cimiotti, Walter Frank..... New York
Cohn, Herman ..... Newark, N. J.
Cohn, Simeon Edward..... New York
Condit, Joseph Dayton, A.B., *Wabash College*..... Terre Haute, Ind.
Connolly, Francis Edward ..... Brooklyn
Cook, Chauncey Voorhees..... Atlantic Highlands, N. J.
Cooke, Albert Samuel..... Whitehall, N. Y.
Cram, George Eversleigh, Ph.B., *Yale*..... Norwalk, Conn.
Creeden, Edward Lawrence, A.B., *St. Francis Xavier*..... New York
Curran, John Dickinson, B.S., *Cornell* ..... Binghamton, N. Y.
Curran, Philip John..... Portland, Conn.
Darrach, William, A.B., *Yale*..... Germantown, Pa.
Day, Arthur Winfield, A.B., *Dartmouth* ..... Athens, N. Y.
de Castro, Raimundo, Jr., A.B., *Univ. of Havana*..... Havana, Cuba
De Long, Faust Stansfield..... Richfield Springs, N. Y.
Drake, William Willson ..... New York
Duncan, Owsley Bennett ..... Paterson, N. J.
Dunseith, James Gracey..... New York
Eaton, Alvin Richard, Jr..... Elizabeth, N. J.
Echarte y Martos, Eduardo, A.B., *Havana Univ*..... New York
Elkin, Heiman Jacob, A.B., *Univ. of Cincinnati*..... New York
Engel, Walter Frederick..... Brooklyn
Erkiletlian, Dikran Hagop, A.B., *Anatolia College*..... Cæsarea, Asia Minor
Feeter, Silas Stewart..... Little Falls, N. Y.
Field, Francis Proctor..... Peoria, Ill.

Flood, George John Balleray.....Waterville, Me.
Foehrenbach, Herman P., A.B., *N. Y. City College*.....New York
Fox, John Crary.....Rutland, Vt.
Frazer, Harvey Thompson, B.S., *Princeton*.....Newark, N. J.
Fulda, Carl.....Brooklyn
Fuller, Maurice Bernard.....Putnam, Conn.
Gabriel, Charles John.....Newark, N. J.
Gale, Sparrell Simmons, A.B., *Roanoke College*.....Salem, Va.
Garretson, Willian Van Pelt.....Jersey City, N. Y.
Garrety, William Plymon, B.S., *N. Y. City College*.....New York
Gibbs, James Philip, A.M. *Southwestern Univ*.....Huntsville, Tex.
Gillette, Curtenius, A.B., *Yale*.....New York
Goldberg, Jacob.....New York
Goldman, Charles.....New York
Goodridge, Frederic Grosvener, A.B., *Harvard*.....New York
Gow, Robert Archibald.....Schuylerville, N. Y.
Greil, Gaston, B.S., *Alabama Polytech. Inst*.....Montgomery, Ala.
Gretsch, Bernard Joseph, LL.B.....New York
Griffin, Arthur Benedict, A.B., *Columbia*.....New York
Grossman, Louis.....New York
Grout, Gerald Harrison.....Saginaw, Mich.
Gunter, Clarence.....Montgomery, Ala.
Haberstroh, Arthur.....New York
Hall, Charles Henry.....Brooklyn
Hart, George Washington.....Brooklyn
Hartman, William Lewis, Ph.B., *N. Y. Univ*.....New York
Haussling, Francis Reynolds, B.S., *Princeton*.....Newark, N. J.
Hayes, Henry Wells Stanley, B.L., *Hobart*.....Phelps, N. Y.
Hennesey, James Francis.....New York
Hervey, Allan Moore, A.B., *Harvard*.....Boston, Mass.
Hess, Alfred Fabian, A.B., *Harvard*.....New York
Hodgson, Frederick Grady.....Athens, Ga.
Holmes, William S., A.B., *Princeton*,.....Freehold, N. J.
Hume, Eugene Francis.....Silver Creek, Ky.
Hyde, Oliver Thompson, B.S., *Amherst*.....Ellington, Conn.
Jackson, Frank Hussy, Jr.....Providence, R. I.
Jacobs, Eshoo, B.S., *Oroomiah College*.....Oroomiah, Persia
Jellinghaus, Charles Frederic, A.B., *N. Y. City College*.....New York
Jones, Willis Bryant.....Newnan, Ga.
Judd, James Robert, A.B., *Yale*.....Honolulu, Hawaiian Islands
Kaine, Lawrence Francis.....New York
Keresey, Walter Louis.....Hoboken, N. Y.
King, Percy John, A.B., *St. Francis Xavier*.....New York
Kramer, David.....New York
Kramer, Leo.....New York
Kurzman, Julius Caesar.....New York
Lawson, Leonidas Moreau, Jr.....New York

Lehmacher, Frank.....Newark, N. J.
Levy, David.....New York
Levy, Isaac Harris.....New York
Lewis, James Hoyt, A.B., *Yale*.....New York
Leyenberger, Samuel Boughton Whitman.....Newark, N. J.
Loizeaux, Edward Sanderson.....Plainfield, N. J.
Lopez-Guillen, José Maria, A.M., *Princeton*.....New York
Mason, Woodruff, B.S., *N. H. College of Agriculture*.....Durham, N. H.
McCabe, Thomas Sheridan.....Newark, N. J.
McCarthy, Joseph Francis, Phar.D., *College of Pharmacy*.....Yonkers, N. Y.
McComb, William Henry.....Jersey City, N. J.
McCready, William Vincent, A.B., *Brown*.....Providence, R. I.
McCully, Rob Roy.....New York
McEntee, Edward James.....Brooklyn
McGill, Elisha Leavenworth.....Petersburg, Va.
McKelvy, James Percy.....Braddock, Pa.
McKeon, John Gerald.....Brooklyn
Meagher, John Francis Wallace.....Brooklyn
Merchant, Marcus Harold, B.P., *Brown*.....Warren, R. I.
Miller, Ethelbert Wesly.....Jersey City, N. J.
Moran, Joseph Francis, A.B., *St. Peter's*.....Jersey City, N. J.
Morton, Charles Edward.....Webster, Mass.
Moynan, William Thomas.....Brooklyn
Mulcahy, Thomas Aloysius.....Hartford, Conn.
Murphy, John Joseph.....Troy, N. Y.
Murrin, James Bernard.....Carbondale, Pa.
Newman, Serenus Lazarus.....New York
Oppenheimer, Bernard Sutro, A.B., *Harvard*.....New York
Pearson, Joseph Murphy.....New York
Perry, Francis Paul.....Keene Valley, N. Y.
Phelan, Joseph Maurice, A.B., *St. Francis Xavier*.....Brooklyn
Pier, Victor Seymour.....Poughkeepsie, N. Y.
Pierce, Edwin Francis, A.B., *Bates*.....Lewiston, Me.
Pinneo, Frank Wilcox.....Newark, N. J.
Pobe, George Otto.....Port Jervis, N. Y.
Pond, Ashley, Jr.....Detroit, Mich.
Powers, Ellis Bullock.....New York
Prentice, Alfred Carlyle, A.B., *Alfred Univ.*.....Adams Centre, N. Y.
Preston, Perry Brower.....Newark, N. J.
Pyle, Frank Winthrop, A.B., *Yale*.....Bridgeport, Conn.
Reinhardt, Emanuel, A.B., *N. Y. City College*.....New York
Reisman, Samuel Charles.....New York
Reynolds, Gibson, A.B., *Univ. of Alabama*.....Montgomery, Ala.
Reynolds, Joseph Lee.....North Castle, N. Y.
Reynolds, Michael Thomas.....New York
Riggio, Louis Dominick.....New York
Robb, William Moody, A.B., *Princeton*.....Amsterdam, N. Y.

Robinson, Elias Podryabinnick, S.B., A.M.....Brooklyn
Roca y Casusa, Carlos.....St. Augustine, Fla.
Rogers, Andrews, Ph.B., *Ohio State Univ.*.....Columbus, O.
Rogers, John Jay, B.S., *Univ. of Wisconsin*.....Milwaukee, Wis.
Rosenthal, Edward.....New York
Rothe, Henry Emory, Jr.....Newark, N. J.
Roys, Charles Kirkland, A.B., *Princeton*.....La Crosse, Wis.
Russell, James Isaac, A.B., *Univ. of Virginia*.....Winchester, Va.
Ryan, Philip Francis Xavier, A.B., *St. Francis Xavier*.....New York
Schaeffer, Benjamin Leonard.....New York
Schenck, Garrie Kouwenhoven Williamson, B.S., *Md. Agricul. College*, Canarsie, N. Y.
Schildecker, Charles Bushfield.....Pittsburgh, Pa.
Schneidenbach, Arthur Jacques.....New York
Schneider, Francis Alphonsus.....New York
Schulhofer, Samuel.....New York
Schulte, Hermann von Wechlinger, A.B., *Trinity*.....Philadelphia, Pa.
Schultz, Alfred Paul, A.B., *N. Y. City College*.....New York
Schulz, Harry.....Newark, N. J.
Schwartz, Henry William.....Bloomfield, N. J.
Schweitzer, Henry.....New York
Selleck, Ernest Edward, Ph.B.....Norwalk, Conn.
Sharp, James Clayton.....Brooklyn
Shearer, Leander Howard, A.B., *Princeton*.....New York
Shearman. Robert Willis, A.B., *Columbia*.....Long Island City, N. Y.
Shipman, Clark Smythe.....New York
Slocum, Harry Britt.....Long Branch, N. J.
Smith, Charles Hendee, B.S., *Cornell*.....Milwaukee, Wis.
Spiegel, Leo.....New York
Spingam, Alexander, B.S., *N. Y. City College*.....New York
Stark, Morris, B.S., *N. Y. City College*.....New York
Stark, Nathan, B.S., *N. Y. City College*.....New York
Starr, Robert Sythoff, A.B., *Trinity*.....Hartford, Conn.
Steedly, Benjamin Broadus,.....Athens, Ga.
Steinberger, Jerome Sewell.....New York
Stetten, De Witt,.....New York
Strong, Samuel Meredith.....New Rochelle, N. Y.
Stryker, Edgar de Mott, B.S., *Rutgers*.....Raritan, N. J.
Sturm, Maurice Arthur.....New York
Summersgill, Harry Travis.....Bennington, Vt.
Sutphen, Edward Blair.....Newark, N. J.
Teahan, William John.....Holyoke, Mass.
Telfair, John Hamilton, Jr.....Port Richmond, N. Y.
Thompson, Edward Cameron, A.B., *Princeton*.....Middletown, N. Y.
Todd, George Wilson.....New York
Uhle, Charles Rusling.....Blairstown, N. J.
Van Alstyne, William Becker.....Plainfield, N. J.

Vandegrift, George Wonson, A.B., *N. Y. City College*.....New York
Van Ingen, Philip, A.B., *Yale*.....New York
Van Wart, Franklin Brush.....Brooklyn
von Deesten, Henry Theodor.....Hoboken, N. J.
Vreeland, William Norbury.....Jersey City, N. J.
Walmsley, Hardie Barr.....New Orleans, La.
Walser, Frederic Theodore.....West New Brighton, N. Y.
Walsh, James Joseph Sebastian, B.S., *Manhattan*.....Westchester, N. Y.
Wechsler, Abraham Hirsch.....Brooklyn
Weiss, Frank Henry, Ph.G., *College of Pharmacy*, *Northwestern Univ.*, Findlay, O.
Westcott, Clinton Stevens.....Providence, R. I.
Weygandt, Fred George.....Brooklyn
Whitbeck, Sherwood Volkert.....Hudson, N. Y.
Whitman, William Rush, A.B., *Roanoke College*.....Pulaski City, Va.
Williams, Henry Tilton, A.B., *Yale*.....Seneca Falls, N. Y.
Williams, Irving Dewey, A.B., *Hamilton*.....Turin, N. Y.
Williams, Percy Herbert, A.B., *Princeton*.....New York
Williams, Thomas Marion, A.B., *Stanford Univ.*.....Duo, West Va.
Wing, Persons Walton.....Glens Falls, N. Y.
Wise, Arthur Heston.....New York
Woglon, William Henry, Jr.....Brooklyn
Wood, Clifford Knox.....Huntington, N. Y.
Woodruff, Harry Adsit.....New York
Yocum, Joseph Grant.....Middletown, N. Y.
Ziegel, Herman Fred Lange, B.S., *N. Y. City College*.....New York

First Year Class.....220

SPECIAL STUDENTS

Bailey, Frederick Randolph, A.M., *Princeton;* M.D., *Columbia*, Elizabeth, N. J.
Bates, William Horatio, M.D., *Columbia*.....New York
Belcher, Herbert James Blauvelt.....Paterson, N. J.
Benton, Frederick Leslie, M.D., *Columbia;* B.S., *National University*, Brooklyn
Bonnell, Clarence Hornbeck, A.B., *Rutgers*.....Port Jervis, N. Y.
Emmert, Edward Jean, M.D., *Miami*.....Laurenceberg, Ind.
Englesby, William Hudson, A.B., M.D., *Univ. of Vermont*...Burlington, Vt.
Farrell, John Aloysius, M.D., *Univ. of Pa*.....West Chester, Pa.
Frentzel, Louis Walter.....Wallington, N. J.
Greenwood, Albert Joseph.....Springfield, Vt.
Hall, Gilbert Hoke, A.B., *Univ. of Nebraska*.....Lincoln, Neb.
Harding, Frederick L., Ph.G., Phar.D., *N. Y. College of Pharmacy*, Newark, N. J.
Hart, George Graham.....Larchmont, N. Y.

Hasbrouck, John Roswell.....New York
Hill, William De Witt.....Brooklyn
Hubbell, Charles Gregory, B.S., *St. Lawrence Univ.*.....New York
Jacobus, Theodore Israel, M.D., *Columbia*.....New York
Jelliffe, Smith Ely, A.B., *Brooklyn Polytech.;* M.D., *Columbia* ...New York
Lansdowne, Frank Burnett, M.D., *Missouri*.....Louisiana, Mo.
Linsley, Jo Hatch, M.D., *Univ. of Vt*.....Burlington, Vt.
Little, George French, A.B., M.D., *Columbia*.....Brooklyn
Mead, Roger Augustin, A.B., *Mt. St. Mary's;* M.D., *Univ. of Vt.*.New York
Miller, Charles Griffin, Ph.B., *Yale;* M.D., *Univ. of Buffalo*,
New Rochelle, N. Y.
Ring, Emil Gustave.....New York
Robinson, John Alexander.....New York
Russell, William Marcus.....Brooklyn
Siegman, Richard.....New York
Spencer, Geo. Warren, M.D., *Univ. of Mich*.....Cleveland, O.
Sweeney, George Alphonsus, M.D., *Univ. of Pa*.....Chester, Pa.
Toreh, Franz, M.D., *Columbia*.....New York
Vogel, William P.....New York
Walther, Arno William .....New York
Wolf, William.....New York
Total.....33

OLD CURRICULUM STUDENT

Rothwell, Thomas Albert.....New York

SUMMARY

Fourth Year Class	143
Third Year Class	151
Second Year Class	189
First Year Class	220
Special Students	33
Old Curriculum Student	1
Students Primarily Registered under this Faculty	737
Seniors from Columbia College	4
Total	741

SCHOOL OF MINES
SCHOOL OF CHEMISTRY
SCHOOL OF ENGINEERING
SCHOOL OF ARCHITECTURE

UNDER THE DIRECTION OF THE FACULTY OF APPLIED SCIENCE

The following departments are represented in the Faculty:

ARCHITECTURE
ASTRONOMY
CHEMISTRY
CIVIL ENGINEERING
ELECTRICAL ENGINEERING
MECHANICAL ENGINEERING
SANITARY ENGINEERING
GEOLOGY
MATHEMATICS
MECHANICS
METALLURGY
MINERALOGY
MINING
PHYSICS

Officers of the Faculty

HENRY S. MUNROE, E.M., Ph.D.
Dean and ex-officio Member of the University Council
FREDERICK R. HUTTON, C.E., Ph.D.
Elected Delegate to the University Council
JAMES F. KEMP, A.B., E.M. *Secretary of the Faculty*

Standing Committees

COMMITTEE ON ADMISSIONS AND EXAMINATIONS: Professors Munroe, Van Amringe, Hutton, Hamlin, Kemp
COMMITTEE ON SPECIAL STUDENTS: Professors Munroe, Hutton, Hamlin

The Faculty

SETH LOW, LL.D., *President*

CHARLES F. CHANDLER, Ph.D., M.D., LL.D., *Professor of Chemistry*
J. HOWARD VAN AMRINGE, A.M., Ph.D., L.H.D., *Professor of Mathematics*
OGDEN N. ROOD, A.M., *Professor of Physics*
HENRY S. MUNROE, E.M., Ph.D., *Professor of Mining and Dean*
WILLIAM R. WARE, B. S., *Professor of Architecture*
FREDERICK R. HUTTON, A.M., C.E., Ph.D., *Professor of Mechanical Engineering and Delegate to the University Council*
JOHN KROM REES, A.M., E.M., Ph.D., *Professor of Astronomy and Director of the Observatory*

PIERRE DE PEYSTER RICKETTS, E.M., Ph.D., *Professor of Analytical Chemistry and Assaying*
ALFRED D. F. HAMLIN, A.M., *Adjunct Professor of Architecture*
ALFRED J. MOSES, E.M., Ph.D., *Adjunct Professor of Mineralogy*
* CHARLES E. COLBY, E.M., C.E., *Adjunct Professor of Organic Chemistry*
FRANK DEMPSTER SHERMAN, Ph.B., *Adjunct Professor of Architecture*
JAMES F. KEMP, A.B., E.M., *Professor of Geology and Secretary of the Faculty*
ROBERT PEELE, E.M., *Adjunct Professor of Mining*
WILLIAM HALLOCK, A.B., Ph.D., *Adjunct Professor of Physics*
FRANCIS B. CROCKER, E.M., Ph.D., *Professor of Electrical Engineering*
WILLIAM H. BURR, C.E., *Professor of Civil Engineering*
ROBERT S. WOODWARD, C.E., Ph.D., *Professor of Mechanics*
HENRY M. HOWE, A.M., S.B., *Professor of Metallurgy*
CHARLES E. PELLEW, E.M., *Adjunct Professor of Chemistry*

NOTE: For other officers of instruction see departmental statements and special circulars. .

Emeritus Officers

THOMAS EGLESTON, E.M., Ph.D., LL.D., *Emeritus Professor of Mineralogy and Metallurgy*
NATHANIEL L. BRITTON, E.M.. Ph.D., *Emeritus Professor of Botany*

Courses of Instruction

The Faculty of Applied Science offers eleven technical courses leading to professional degrees. These courses consist entirely of required work. Besides this professional instruction the Faculty permits certain subjects to be studied in partial fulfilment of the requirements for the degrees of A.B., A.M. and Ph.D. ; and also, under special conditions, admits students who are not candidates for a degree, to pursue special subjects.

UNDERGRADUATE COURSES FOR THE PROFESSIONAL DEGREES

In the School of Mines						
1. Mining Engineering	leading	to	the	degree	of	E.M.
2. Mining Engineering, Geological Option	"	"	"	"	"	E.M.
3. Metallurgy	"	"	"	"	"	Met.E.
In the School of Engineering						
4. Civil Engineering	"	"	"	"	"	C.E.
5. Sanitary Engineering	"	"	"	"	"	C.E.
6. Electrical Engineering	"	"	"	"	"	E.E.
7. Mechanical Engineering	"	"	"	"	"	Mech.E.
In the School of Chemistry						
8. Analytical Chemistry	"	"	"	"	"	B.S.
9. Industrial Chemistry	"	"	"	"	"	B.S.
10. Organic Chemistry	"	"	"	"	"	B.S.
In the School of Architecture						
11. Architecture	"	"	"	"	"	B.S.

* *Died Oct. 15th, 1897.*

These courses are intended to meet the requirements of the several professions indicated. Many of the courses permit a certain amount of specialization, particularly in the fourth year. The courses in the School of Mines are so arranged that the student can emphasize the engineering, the metallurgical, or the geological side of his profession, while one of the alternative courses in Mechanical Engineering is designed for those who wish to make a speciality of mine plant and machinery. A course in Sanitary Engineering (leading to the degree of Civil Engineer) is provided for those who wish to emphasize this important branch of civil engineering. The Mechanical Engineering course offers three alternatives in the fourth year, emphasizing respectively the dynamic, the electrical, and the mining side of the mechanical engineer's work. Three courses are offered in Chemistry, for Analytical Chemists, Industrial Chemists, and Organic Chemists, respectively. The School of Architecture offers two alternatives in the fourth year—a course of Advanced Architectural History and Design, and a course of Advanced Architectural Engineering and Practice. Full particulars regarding each of these courses of study are contained in special circulars, which will be forwarded on application to the Secretary of the University.

ELECTIVE COURSES OPEN TO SENIORS IN THE COLLEGE

Members of the Senior class in the College who are properly qualified are admitted to all the studies of the first year in the courses under the Faculty of Applied Science and to such studies in other years as may be allowed by the Dean of the College with the consent of the head of the department concerned.

SPECIAL STUDENTS

Graduates of the School of Mines, the School of Chemistry, the School of Engineering, and the School of Architecture, and of other institutions of like grade and standing, may pursue any subjects taught in the schools for which they are properly qualified. Permission to pursue special courses is sometimes given, for reasons of weight, to persons of mature age who are not graduates.

UNIVERSITY COURSES IN APPLIED SCIENCE

The Faculty of Applied Science has charge of candidates for the degrees of Master of Arts and Doctor of Philosophy who desire to undertake advanced study or special investigations in mining, metallurgy, engineering (civil, sanitary, electrical, and mechanical), or in architecture. Details of these courses will be found in the departmental statements, as follows:

ARCHITECTURE, page 38
CIVIL AND SANITARY ENGINEERING, page 57
ELECTRICAL ENGINEERING, page 61
MECHANICAL ENGINEERING, page 65
MINING, page 103
METALLURGY, page 98

COURSE IN MINING ENGINEERING

First Year

TRIGONOMETRY (Mathematics X*)—4 hours, first part of first half-year
ALGEBRA (Mathematics X)—4 hours, second part of first half-year
ANALYTICAL GEOMETRY (Mathematics XI)—4 hours, second half-year
PHYSICS (Physics I)—3 hours
CHEMISTRY (Chemistry I)—4 hours
QUALITATIVE ANALYSIS (Chemistry VII)—2 hours, and 4 afternoons and Saturdays of alternate weeks laboratory
BOTANY (Botany VIII) 2 hours, first half-year
ZOÖLOGY (Zoölogy I)—2 hours, second half-year
BLOWPIPE ANALYSIS and CRYSTALLOGRAPHY (Mineralogy I and II) 2 hours and afternoons of alternate weeks laboratory, first half-year
MINERALOGY (Mineralogy IV)—2 hours, and 1 afternoon laboratory, second half-year
SURVEYING (Civil Engineering I)—2 hours, second half-year
DRAWING (Mechanical Engineering I)—1 hour, and drawing-room, first half-year
DESCRIPTIVE GEOMETRY AND DRAWING (Mechanical Engineering I)—2 hours, and afternoons of alternate weeks drawing-room, second half-year

Summer Vacation

SURVEYING (Civil Engineering XV)—6 weeks field work

Second Year

ANALYTICAL GEOMETRY AND CALCULUS (Mathematics XII)—4 hours
PHYSICS (Physics III)—2 hours, first half-year
PHYSICAL LABORATORY (Physics III)—2 hours
INDUSTRIAL CHEMISTRY (Chemistry XXIV)—3 hours
QUANTITATIVE ANALYSIS (Chemistry XII)—2 hours, first half-year and 4 afternoons and Saturdays laboratory alternate weeks
MINERALOGY (Mineralogy IV)—2 hours, and 3 hours laboratory, first half-year
OPTICAL MINERALOGY (Mineralogy VI)—2 hours, and 1 afternoon laboratory for 2 months, second half-year
GEOLOGY (Geology II)—3 hours
PETROGRAPHY (Geology IV)—2 hours, and 1 afternoon laboratory for 2 months, second half-year
EXCAVATION AND TUNNELLING (Mining I)—3 hours, first half-year
BORING AND SHAFT SINKING (Mining II)—3 hours for 3 months, second half-year
SUPPORT OF MINE EXCAVATIONS (Mining IIA)—3 hours for 1 month, second half-year
DRAWING (Mechanical Engineering I and II)—4 afternoons drawing-room, first half-year.

Summer Vacation

PRACTICAL MINING (Mining XI) *optional*—5 weeks
FIELD GEOLOGY (Geology XIII) *optional*—1 week
SURVEYING (Civil Engineering XVI)—6 weeks field work
RAILROAD SURVEYING (Civil Engineering XVII) *optional*—4 weeks field work

* See pages 35 to 144 for departmental statements

COURSE IN MINING ENGINEERING

Third Year

ANALYTICAL MECHANICS (Mechanics I*)—3 hours.
ASSAYING (Chemistry XVII)—3 hours, first half-year and 3 afternoons and Saturdays alternate weeks laboratory
GEOLOGY (Geology II)—3 hours
RESISTANCE OF MATERIALS (Civil Engineering V)—3 hours, first half-year ; 2 hours, second half-year
TESTING OF MATERIALS (Mechanical Engineering XVI)—Afternoon hours laboratory second half-year
ENGINEERING OF POWER PLANTS (Mechanical Engineering XI)—1 hour, second half-year
MINING (Mining III)—2 hours
ORE DRESSING (Mining IV)—2 hours
MINE CONSTRUCTIONS (Mining VIIA)—1 hour, second half-year
METALLURGY (Metallurgy I and II)—4 hours
ELECTRICAL ENGINEERING (Electrical Engineering V)—1 hour, and 1 afternoon laboratory. second half-year
GRAPHIC STATICS (Civil Engineering VI)—2 hours, second half-year
DESIGN, PROBLEMS (Civil Engineering V and VI)—Afternoon work
VACATION CLASS IN MECHANICAL ENGINEERING (Mechanical Engineering XXXV) *optional*—second term

Summer Vacation

PRACTICAL MINING (Mining XI)—5 weeks
FIELD GEOLOGY (Geology XIII)—1 week
RAILROAD SURVEYING (Civil Engineering XVII)—4 weeks field work

Fourth Year

ECONOMIC GEOLOGY (Geology III)—3 hours
THERMODYNAMICS (Mechanics IV)—3 hours, first half-year
THE STEAM ENGINE AND ITS ACCESSORIES (Mechanical Engineering XII)—2 hours, first half-year
THE STEAM BOILER AND ITS ACCESSORIES (Mechanical Engineering XIII)—2 hours, second half-year
HEAT AND ITS APPLICATIONS (Mechanical Engineering XIX)—2 hours, and laboratory
MOTORS (Mechanical Engineering XX)—1 hour, first half-year
DYNAMICS OF MOTORS (Mechanical Engineering XXI)—1 hour, second half-year
MINE ENGINEERING (Mining VI)—2 hours, first half-year ; 1 hour, second half-year
MINE PLANT (Mining VII) 3 hours, first half-year ; 2 hours, second half-year
MINE SURVEYING (Mining IX)—1 hour, second half-year
MINE ADMINISTRATION (Mining X)—1 hour, second half-year
METALLURGY (Metallurgy III)—4 hours
ORE DRESSING LABORATORY (Mining V)—Afternoon work for 3 weeks, second half-year
DESIGN OF MINE PLANT (Mining VIII) afternoon work
PROJECT OR THESIS in Mining

* See pages 35 to 144 for departmental statements

COURSE IN MINING ENGINEERING

GEOLOGICAL ALTERNATIVE

(The first three years are the same as in the regular course)

Fourth Year

ECONOMIC GEOLOGY (Geology III)—3 hours

PETROLOGY (Geology VI)—2 hours, and one afternoon laboratory

PALÆONTOLOGY (Geology VII)—2 hours, and 1 afternoon laboratory

GEOLOGICAL EXAMINATIONS AND SURVEYS (Geology X)—1 hour

THERMODYNAMICS (Mechanics IV)—3 hours, first half-year

HEAT AND ITS APPLICATIONS (Mechanical Engineering XIX)—2 hours. Professor HUTTON and Mr. GREGORY

MINE ENGINEERING (Mining VI)—2 hours, first half-year; 1 hour, second half-year

MINE PLANT (Mining VII)—3 hours, first half-year; 2 hours, second half-year

MINE SURVEYING (Mining IX)—1 hour, second half-year

MINE ADMINISTRATION (Mining X)—1 hour, second half-year

ORE-DRESSING LABORATORY (Mining V)—Afternoon work for three weeks, second half-year

METALLURGY (Metallurgy III)—4 hours

PROJECT AND THESIS—2 afternoons and Saturdays.

COURSE IN METALLURGY

First Year

TRIGONOMETRY (Mathematics X*)—4 hours, first part of first half-year.
ALGEBRA (Mathematics X)—4 hours, second part of first half-year
ANALYTICAL GEOMETRY (Mathematics XI)—4 hours, second half-year
PHYSICS (Physics I)—3 hours
CHEMISTRY (Chemistry I)—4 hours
QUALITATIVE ANALYSIS (Chemistry VI)—4 hours, and 4 afternoons and Saturdays of alternate weeks laboratory
BLOWPIPE ANALYSIS AND CRYSTALLOGRAPHY (Mineralogy I and II)—2 hours, and afternoons, of alternate weeks laboratory, first half-year
MINERALOGY (Mineralogy IV)—2 hours, and 1 afternoon laboratory, second half-year
SURVEYING (Civil Engineering I)—2 hours, second half-year
DRAWING (Mechanical Engineering I)—drawing-room, first half-year
DESCRIPTIVE GEOMETRY AND DRAWING (Mechanical Engineering I) 2 hours and afternoons of alternate weeks drawing-room, second half-year

Summer Vacation

SURVEYING (Civil Engineering XV)—6 weeks field work

Second Year

ANALYTICAL GEOMETRY AND CALCULUS (Mathematics XII)—4 hours
PHYSICS (Physics III)—2 hours, first half-year
PHYSICAL LABORATORY (Physics III) 2 hours
INDUSTRIAL CHEMISTRY (Chemistry XXIV)—3 hours
QUANTITATIVE ANALYSIS (Chemistry X)—2 hours, first half-year and 4 afternoons and Saturdays alternate weeks laboratory
OPTICAL MINERALOGY (Mineralogy VI)—2 hours, and 1 afternoon laboratory for 2 months, second half-year
PETROGRAPHY (Geology IV)—2 hours, and 1 afternoon laboratory for 2 months, second half-year
MINERALOGY (Mineralogy IV) 2 hours, and 1 afternoon laboratory, first half-year
GEOLOGY (Geology II) —3 hours
EXCAVATION AND TUNNELLING (Mining I) 3 hours, first half-year
BORING AND SHAFT SINKING (Mining II)—3 hours for 3 months, second half-year
SUPPORT OF MINE EXCAVATIONS (Mining IIA)—3 hours for 1 month, second half-year
GRAPHICS AND DRAWING (Mechanical Engineering I)—drawing-room, first half-year
DRAWING (Mechanical Engineering II)—drawing-room, second half-year

Summer Vacation

PRACTICAL MINING (Mining XI) *optional*—5 weeks
FIELD GEOLOGY (Geology XIII) *optional*—1 week
SURVEYING (Civil Engineering XVI)—6 weeks field work
RAILROAD SURVEYING (Civil Engineering XVII) *optional*—4 weeks field work

* See pages 35 to 144 for departmental statements

COURSE IN METALLURGY

Third Year

ANALYTICAL MECHANICS (Mechanics I)—3 hours
QUANTITATIVE ANALYSIS (Chemistry X)—2 hours, and 4 afternoons and Saturdays laboratory, second half-year
ASSAYING (Chemistry XVII)—4 hours, and 3 afternoons and Saturdays laboratory, first half-year
GEOLOGY (Geology II)—3 hours
RESISTANCE OF MATERIALS (Civil Engineering V)—3 hours, first half-year: 2 hours, second half-year
ENGINEERING OF POWER PLANTS (Mechanical Engineering XI)—1 hour, second half-year
MINING (Mining III)—2 hours
ORE DRESSING (Mining IV)—2 hours
MINE CONSTRUCTIONS (Mining VIIa)—1 hour
ELECTRICAL ENGINEERING (Electrical Engineering V) 1 hour, and 1 afternoon laboratory, second half-year
METALLURGY (Metallurgy I and II)—5 hours
GRAPHIC STATICS (Civil Engineering VI)—2 hours, second half-year
DESIGN, PROBLEMS (Civil Engineering V and VI)—Afternoon work
VACATION CLASS IN MECHANICAL ENGINEERING (Mechanical Engineering XXXV) *optional*—second half-year

Summer Vacation

PRACTICAL MINING (Mining XIII)—5 weeks
FIELD GEOLOGY (Geology XIII)—1 week
RAILROAD SURVEYING (Civil Engineering XVII)—4 weeks field work

Fourth Year

ECONOMIC GEOLOGY (Geology III)—3 hours
THERMODYNAMICS (Mechanics IV)—3 hours, first half-year
THE STEAM ENGINE AND ITS ACCESSORIES (Mechanical Engineering XII)—2 hours, first half-year
THE STEAM BOILER AND ITS ACCESSORIES—Mechanical Engineering XIII)—2 hours, second half-year
MOTORS (Mechanical Engineering XX)—1 hour, first half-year
DYNAMICS OF MOTORS (Mechanical Engineering XXI)—1 hour, second half-year
HEAT AND ITS APPLICATIONS (Mechanical Engineering XIX)—2 hours, and laboratory
MINE ENGINEERING (Mining VI)—2 hours, first half-year; 1 hour, second half-year
MINE PLANT (Mining VII)—3 hours, first half-year; 2 hours, second half-year
MINE SURVEYING (Mining IX)—1 hour, second half-year
MINE ADMINISTRATION (Mining X)—1 hour, second half-year
METALLURGY (Metallurgy III)—5 hours
ORE DRESSING LABORATORY (Mining V)—afternoon work for three weeks, second half-year
DRAWING (in connection with Project)
PROJECT

COURSES IN ANALYTICAL, INDUSTRIAL, AND ORGANIC CHEMISTRY

First Year

Identical for the three Chemical Courses

TRIGONOMETRY (Mathematics X*)—4 hours, first part of first half-year

ALGEBRA (Mathematics X)—4 hours, second part of first half-year

ANALYTICAL GEOMETRY (Mathematics XI)—4 hours, second half-year

PHYSICS (Physics I)—3 hours

CHEMISTRY (Chemistry I)—4 hours

QUALITATIVE ANALYSIS (Chemistry VII)—4 hours, and 4 afternoons and Saturdays of alternate weeks laboratory

BLOWPIPE ANALYSIS AND CRYSTALLOGRAPHY (Mineralogy I and II)—2 hours, and 4 afternoons of alternate weeks laboratory first half-year

MINERALOGY (Mineralogy IV)—2 hours, and 1 afternoon laboratory

DRAWING (Mechanical Engineering I)—1 hour first half-year, and drawing-room

Summer Vacation

SUMMER WORK, a set of drawings on subjects to be assigned by the Instructor in Drawing

Second Year

Identical for the three Chemical Courses

ANALYTICAL GEOMETRY AND CALCULUS (Mathematics XII)—4 hours

PHYSICS (Physics III)—2 hours, first half-year

PHYSICAL LABORATORY (Physics III)—2 hours

ORGANIC CHEMISTRY, ELEMENTARY (Chemistry XX)—3 hours

INDUSTRIAL CHEMISTRY (Chemistry XXIV)—4 hours

QUANTITATIVE ANALYSIS (Chemistry IX)—4 hours, and 4 afternoons and Saturdays laboratory

PHYSICAL CHEMISTRY (Chemistry III)—2 hours, and 2 hours laboratory, second half-year

MINERALOGY (Mineralogy IV)—2 hours, and 3 hours laboratory

Summer Vacation

CHEMICAL EXCURSIONS and Memoir, on some subject to be assigned by the Professor of Chemistry

* See pages 35 to 144 for departmental statements

Third Year

Course A.—Analytical Chemistry
Course C.—Organic Chemistry

THEORETICAL MECHANICS (Mechanics III)—2 hours

INDUSTRIAL CHEMISTRY (Chemistry XXV)—4 hours

INDUSTRIAL CHEMISTRY, LABORATORY (Chemistry XXVI)—3 afternoons

ASSAYING (Chemistry XVII)—3 hours, and 2 afternoons and Saturdays laboratory first half-year

QUANTITATIVE ANALYSIS (Chemistry XI)—4 hours, and 4 afternoons and Saturdays laboratory second half-year

METALLURGY (Metallurgy I and II)—4 hours

Summer Vacation

CHEMICAL EXCURSIONS and Memoir, on some subject to be assigned by the Professor of Chemistry

Third Year

Course B.—Industrial Chemistry

THEORETICAL MECHANICS (Mechanics III)—2 hours

INDUSTRIAL CHEMISTRY, (Chemistry XXV)—4 hours

INDUSTRIAL CHEMISTRY, LABORATORY (Chemistry XXVI and XXVII)—3 afternoons

ASSAYING (Chemistry XVII)—3 hours, and 2 afternoons and Saturdays laboratory first half-year

QUANTITATIVE ANALYSIS (Chemistry XI)—4 hours, and 4 afternoons and Saturdays laboratory second half-year

METALLURGY (Metallurgy I and II)—4 hours

Summer Vacation

CHEMICAL EXCURSIONS and Memoir, on some subject to be assigned by the Professor of Chemistry

Fourth Year

Course A.—Analytical Chemistry

ELEMENTARY THERMODYNAMICS (Mechanics V)—2 hours, first half-year

INDUSTRIAL CHEMISTRY (Chemistry XXV)—4 hours

INDUSTRIAL CHEMISTRY, LABORATORY (Chemistry XXVII)—3 afternoons, second half-year

ANALYTICAL CHEMISTRY (Chemistry XIV)—2 hours, through year, and 4 afternoons and Saturdays laboratory, second half-year

ORGANIC CHEMISTRY (Chemistry XXI)—4 hours, first half-year, and 3 hours, second half-year, and at least 22 hours laboratory, first half-year

PHYSICAL CHEMISTRY (Chemistry IV)—3 hours, and 1 afternoon laboratory

ELECTRO-CHEMISTRY (Electrical Engineering III)—1 hour. Professor CROCKER

METALLURGY (Metallurgy III) 4 hours

THESIS, on some Chemical subject approved by the head of the department

Fourth Year

Course B.—Industrial Chemistry

Elementary Thermodynamics (Mechanics V)—2 hours, first half-year

Industrial Chemistry (Chemistry XXV)—4 hours

Industrial Chemistry, Laboratory (Chemistry XXVIII)—5 afternoons, second half-year

Organic Chemistry (Chemistry XXI)—4 hours, first half-year, and 3 hours, second half-year, and at least 22 hours laboratory, second half-year

Physical Chemistry (Chemistry IV)—3 hours, and 1 afternoon laboratory first half-year

Electro-Chemistry (Electrical Engineering III)—1 hour, first half-year

Electrical Engineering (Electrical Engineering V)—1 hour, and 2 hours laboratory, second half-year

Engineering of Power Plants (Mechanical Engineering XI, XII and XIII)—2 hours, first half-year, and 3 hours, second half-year

Thesis, on some Chemical subject approved by the head of the department

Fourth Year

Course C.—Organic Chemistry

Elementary Thermodynamics (Mechanics V)—2 hours, first half-year

Industrial Chemistry (Chemistry XXV)—4 hours

Industrial Chemistry, Laboratory (Chemistry XXVII)—3 afternoons, second half-year

Organic Chemistry (Chemistry XXI)—6 hours, first half-year, and 5 hours second half-year, and at least 22 hours laboratory first half-year and 16 second half-year

Physical Chemistry (Chemistry IV)—3 hours, throughout the year, and one laboratory exercise, second half-year

Electro-Chemistry (Electrical Engineering III)—1 hour

Physical Crystallography (Mineralogy VIII)—1 hour laboratory

Thesis, on some Chemical subject approved by the head of the department

COURSE IN CIVIL ENGINEERING

First Year

TRIGONOMETRY (Mathematics X*)—4 hours, first part of first half-year

ALGEBRA (Mathematics X)—4 hours, second part of first half-year

ANALYTICAL GEOMETRY (Mathematics XI)—4 hours, second half-year

PHYSICS (Physics I)—3 hours

CHEMISTRY (Chemistry I)—4 hours

QUALITATIVE ANALYSIS (Chemistry VII)—2 hours, and 3 afternoons and Saturdays of alternate weeks laboratory

BOTANY (Botany VIII)—2 hours, first half-year

SURVEYING (Civil Engineering I)—2 hours, second half-year

DRAWING (Mechanical Engineering I)—1 hour, and drawing-room, first half-year

DESCRIPTIVE GEOMETRY AND DRAWING (Mechanical Engineering I)—2 hours, and drawing-room, second half-year

SHOP WORK (Mechanical Engineering III) 1 afternoon in shops

Summer Vacation

SURVEYING (Civil Engineering XV)—6 weeks field work

Second Year

ANALYTICAL GEOMETRY AND CALCULUS (Mathematics XII)—4 hours

PHYSICS (Physics III)—2 hours, first term

PHYSICAL LABORATORY (Physics III)—2 hours

INDUSTRIAL CHEMISTRY (Chemistry XXIV)—3 hours

MINERALS OF BUILDING STONES (Mineralogy V)—2 hours, and 2 hours laboratory

ROAD ENGINEERING (Civil Engineering II)—2 hours, first half-year

WATER SUPPLY AND IRRIGATION (Civil Engineering III)—2 hours, second half-year

GRAPHICS AND DRAWING (Mechanical Engineering I and II)—2 hours, and drawing-room, first term

DRAWING (Mechanical Engineering I and II)—2 hours, and drawing-room, second term

Summer Vacation

SURVEYING (Civil Engineering XVI)—6 weeks field work

* See pages 35 to 144 for departmental statements

COURSE IN CIVIL ENGINEERING

Third Year

ANALYTICAL MECHANICS (Mechanics I)—3 hours

GEOLOGY (Geology II)—3 hours

GEODESY (Astronomy III)—2 hours

RESISTANCE OF MATERIALS (Civil Engineering V)—3 hours, first half-year; 2 hours, second half-year

ENGINEERING OF POWER PLANTS (Mechanical Engineering XI)—1 hour, second half-year

MASONRY STRUCTURES (Civil Engineering IV)—1 hour

THEORY OF TRUSSES (Civil Engineering VII)—2 hours, second half-year

SEWAGE DISPOSAL (Civil Engineering VIII)—2 hours, first half-year

GRAPHIC STATICS (Civil Engineering VI)—2 hours, second half-year

THEORY OF RAILROAD SURVEYING (Civil Engineering XIV)—1 hour

ELECTRICAL ENGINEERING (Electrical Engineering V)—1 hour, and 1 afternoon laboratory, second half-year

DESIGN, PROBLEMS (Civil Engineering IV, V, VI, and VII)—Afternoon work

VACATION CLASS IN MECHANICAL ENGINEERING (Mechanical Engineering XXXV) *optional*—second half-year

Summer Vacation

PRACTICAL GEODESY (Astronomy III)—6 weeks field work

RAILROAD SURVEYING (Civil Engineering XVII)—4 weeks field work

Fourth Year

GEODESY (Astronomy III)—2 hours, first half-year

DESIGN OF BRIDGES AND BUILDINGS (Civil Engineering X)—2 hours

HYDRAULICS (Civil Engineering XII)—2 hours, first half-year

THERMODYNAMICS (Mechanics IV)—3 hours, first half-year

THE STEAM ENGINE AND ITS ACCESSORIES (Mechanical Engineering XII)—2 hours, first half-year

THE STEAM BOILER AND ITS ACCESSORIES (Mechanical Engineering XIII)—2 hours, second half-year

HEAT AND ITS APPLICATIONS (Mechanical Engineering XIX)—2 hours, and laboratory

MOTORS (Mechanical Engineering XX)—1 hour, first half-year

DYNAMICS OF MOTORS (Mechanical Engineering XXI)—1 hour, second half-year

MACHINERY AND MECHANISM (Mechanical Engineering XVIII)—2 hours

PUMPS AND PUMPING ENGINES (Mechanical Engineering XXVII)—course of 6 lectures, first half-year

FOUNDATIONS (Civil Engineering XI)—2 hours

SEWERS AND HARBORS (Civil Engineering XIII)—2 hours, second half-year

RAILROAD ENGINEERING (Mechanical Engineering XXVI)—3 hours, first half of first half-year; (Civil Engineering IX)—3 hours, second half of first half-year; 3 hours, second half-year

DESIGN, PROBLEMS (Civil Engineering IX, X, XI, XII, and XIII)—Afternoon work

PROJECT OR THESIS

COURSE IN SANITARY ENGINEERING

First Year

TRIGONOMETRY (Mathematics X*)—4 hours, first part of first half-year

ALGEBRA (Mathematics X)—4 hours, second part of first half-year

ANALYTICAL GEOMETRY (Mathematics XI)—4 hours, second half-year

PHYSICS (Physics I)—3 hours

CHEMISTRY (Chemistry I)—4 hours

QUALITATIVE ANALYSIS (Chemistry VII)—2 hours, and 3 afternoons and Saturdays of alternate weeks laboratory

BOTANY (Botany VIII)—2 hours, first half-year

SURVEYING (Civil Engineering I)—2 hours, second half-year

DRAWING (Mechanical Engineering I)—1 hour, and drawing-room, first half-year

DESCRIPTIVE GEOMETRY AND DRAWING (Mechanical Engineering I)—2 hours, and drawing-room, second half-year

SHOP WORK (Mechanical Engineering III)—1 afternoon in shop

Summer Vacation

SURVEYING (Civil Engineering XV)—6 weeks field work

Second Year

ANALYTICAL GEOMETRY AND CALCULUS (Mathematics XII)—4 hours

PHYSICS (Physics III)—2 hours, first half-year

PHYSICAL LABORATORY (Physics III)—2 hours

INDUSTRIAL CHEMISTRY (Chemistry XXIV)—3 hours

MINERALS OF BUILDING STONES (Mineralogy V)—2 hours, and 2 hours laboratory

ROAD ENGINEERING (Civil Engineering II)—2 hours, first half-year

WATER SUPPLY AND IRRIGATION (Civil Engineering III)—2 hours, second half-year

SANITARY ENGINEERING OF BUILDINGS (Sanitary Engineering I)—2 hours, first half-year

GENERAL PRINCIPLES OF HYGIENE AND SANITARY SCIENCE (Sanitary Engineering II)—2 hours, second half-year

GENERAL BIOLOGY—2 hours, second half-year

GRAPHICS AND DRAWING (Mechanical Engineering I and II)—2 hours, and drawing-room, first half-year

DRAWING (Mechanical Engineering I and II)—2 hours, and drawing-room, second half-year

Summer Vacation

SURVEYING (Civil Engineering XVI)—6 weeks field work

* See pages 35 to 144 for departmental statements

COURSE IN SANITARY ENGINEERING

Third Year

Analytical Mechanics (Mechanics I)—3 hours
Geology (Geology II)—3 hours
Geodesy (Astronomy III)—2 hours
Resistance of Materials (Civil Engineering V)—3 hours, first half-year; 2 hours, second half-year
Microscopy—2 hours, and 2 hours laboratory
Engineering of Power Plants (Mechanical Engineering XI)—1 hour, second half-year
Masonry Structures (Civil Engineering IV)—1 hour, second half-year
Theory of Trusses (Civil Engineering VII)—2 hours, second half-year
Sewage Disposal (Civil Engineering VIII) 2 hours, first half-year
Graphic Statics (Civil Engineering VI)—2 hours, second half-year
Theory of Railroad Surveying (Civil Engineering XIV)—1 hour
Electrical Engineering (Electrical Engineering V)—1 hour, and 1 afternoon laboratory, second half-year
Design, Problems (Civil Engineering IV, V, VI, and VII)—afternoon work
Vacation Class in Mechanical Engineering (Mechanical Engineering XXXV) *optional*—second half-year

Summer Vacation

Practical Geodesy (Astronomy III)—6 weeks field work
Railroad Surveying (Civil Engineering XVII)—4 weeks field work

Fourth Year

Heating and Ventilation—2 hours
Design of Bridges and Buildings (Civil Engineering X)—2 hours, first half-year
Hydraulics (Civil Engineering XII)—2 hours, first half-year
Thermodynamics (Mechanics IV)—3 hours, first half-year
The Steam Engine and its Accessories (Mechanical Engineering XII)—2 hours, first half-year
The Steam Boiler and its Accessories (Mechanical Engineering XIII)—2 hours, second half-year
Heat and its Applications (Mechanical Engineering XIX)—2 hours, and laboratory
Motors (Mechanical Engineering XX)—1 hour, first half-year
Dynamics of Motors (Mechanical Engineering XXI)—1 hour, second half-year
Microbiology—2 hours, and 2 hours laboratory
Pumps and Pumping Engines (Mechanical Engineering XXVI)—course of 6 lectures, first half-year
Foundations (Civil Engineering XI)—2 hours, first half-year
Drainage of Country Districts and Towns—2 hours, second half-year
Sewers and Harbors (Civil Engineering XIII)—2 hours, second half-year
Railroad Engineering (Mechanical Engineering XXVI—3 hours, first half of first half-year; (Civil Engineering IX)—3 hours, second half of first half-year; 3 hours, second half-year
Design, Problems (Civil Engineering IX, X, XI, XII, and XIII)—Afternoon work
Project or Thesis

COURSE IN ELECTRICAL ENGINEERING

First Year

TRIGONOMETRY (Mathematics X*)—4 hours, first part of first half-year

ALGEBRA (Mathematics X)—4 hours, second part of first half-year

ANALYTICAL GEOMETRY (Mathematics XI)—4 hours, second half-year

PHYSICS (Physics I)—3 hours

CHEMISTRY (Chemistry I)—4 hours

QUALITATIVE ANALYSIS (Chemistry VII)—2 hours, and 4 afternoons and Saturdays of alternate weeks laboratory

DRAWING (Mechanical Engineering I)—1 hour, and afternoons of alternate weeks drawing-room, first half-year

DESCRIPTIVE GEOMETRY AND DRAWING (Mechanical Engineering I)—2 hours, and afternoons of alternate weeks drawing-room, second half-year

SHOP WORK (Mechanical Engineering III and IV)—1 afternoon in shop

Summer Vacation

SUMMER WORK, a set of drawings

Second Year

ANALYTICAL GEOMETRY AND CALCULUS (Mathematics XII)—4 hours

PHYSICS (Physics III)—2 hours

PHYSICAL LABORATORY (Physics III)—8 hours

INDUSTRIAL CHEMISTRY (Chemistry XXIV)—3 hours

QUANTITATIVE ANALYSIS (Chemistry XIII)—1 hour, and 3 hours laboratory, second half-year

ELEMENTS OF ELECTRICAL ENGINEERING (Electrical Engineering VII)—1 hour, first half-year, 2 hours, second half-year

ENGINEERING OF POWER PLANTS (Mechanical Engineering XI—1 hour, second half-year

GRAPHICS AND DRAWING (Mechanical Engineering I and II)—2 hours, and 3 afternoons drawing-room, first half-year

DRAWING (Mechanical Engineering I and II)—2 hours, and 3 afternoons drawing-room, second half-year

SHOP WORK (Mechanical Engineering VI and VII)—1 afternoon in shop

Summer Vacation

MEMOIR

* See pages 35 to 144 for departmental statements

COURSE IN ELECTRICAL ENGINEERING

Third Year

Analytical Mechanics (Mechanics I)—3 hours

Resistance of Materials (Civil Engineering V)—3 hours and 2 afternoons, first term ; 2 hours, and 2 afternoons, second half-year

Properties of Materials (Mechanical Engineering X)—2 hours

Testing of Materials (Mechanical Engineering XVI)—afternoon laboratory

The Steam Engine and its Accessories (Mechanical Engineering XII)—2 hours, first half-year

The Steam Boiler and its Accessories (Mechanical Engineering XIII)—2 hours, second half-year

Dynamo and Motor Practice (Electrical Engineering I)—3 hours, first term

Electrical Engineering (Electrical Engineering VI)—1 hour.

Electrical Engineering Laboratory (Electrical Engineering X)—2 afternoons

Electric Lighting (Electrical Engineering IV)—3 hours, second half-year

Theory of Dynamo and Motor (Mechanics VI)—3 hours, first half-year ; (Mechanics VII)—3 hours, second half-year

Drawing (Mechanical Engineering XXII)—1 afternoon

Vacation Class in Mechanical Engineering (Mechanical Engineering XXXV) *optional*—second half-year

Summer Vacation

Memoir

Fourth Year

Thermodynamics (Mechanics IV)—3 hours, first term

Heat and its Applications (Mechanical Engineering XIX)—2 hours, and laboratory.

Motors (Mechanical Engineering XX)—1 hour, first half-year

Dynamics of Motors (Mechanical Engineering XXI) 1 hour, second half-year

Machinery and Mechanism (Mechanical Engineering XVIII)—2 hours

Electrical Engineering (Electrical Engineering III)—1 hour first half-year ; 3 hours, second half-year

Electrical Engineering Laboratory (Electrical Engineering XI and XXI)—3 afternoons, first half-year ; work in connection with graduation thesis, second half-year

Electric Power (Electrical Engineering II)—3 hours, first half-year

Theory of Alternators and Transformers (Mechanics VIII)—3 hours, first half-year

Electric Railway (Electrical Engineering VIII)—2 hours, second half-year

Management of Electrical Plants (Electrical Engineering XVII)—3 hours, second half-year

Theory of Variable Currents (Mechanics IX)—2 hours, second half-year

Advanced Theory of Electricity (Mechanics XIV, XIVa, XV, or XVII), *optional*—second half-year

Drawing, Problems, and Design (in connection with Electrical Engineering II and III), first half-year ; (in connection with Electrical Engineering II, III, and VIII), second half-year

Thesis

COURSES IN MECHANICAL ENGINEERING

First Year

TRIGONOMETRY (Mathematics X*)—4 hours, first part of first half-year

ALGEBRA (Mathematics X)—4 hours, second part of first half-year

ANALYTICAL GEOMETRY (Mathematics XI)—4 hours, second half-year

PHYSICS (Physics I)—3 hours

PHYSICAL LABORATORY (Physics III)—6 hours

CHEMISTRY (Chemistry I)—4 hours

QUALITATIVE ANALYSIS (Chemistry VII)—2 hours and 3 afternoons and Saturdays laboratory work

DESCRIPTIVE GEOMETRY AND DRAWING (Mechanical Engineering I)—2 hours, and 3 afternoons drawing-room practice alternate weeks

SHOP-WORK (Mechanical Engineering III and IV)—2 afternoons in shop

Summer Vacation

SUMMER CLASS IN SHOP-WORK (Mechanical Engineering V)—100 hours in 3 weeks in June

MEMOIR, OR DRAWINGS, on subjects to be assigned by the Instructor in Drawing (Mechanical Engineering XXXVI)

Second Year

ANALYTICAL GEOMETRY AND CALCULUS (Mathematics XIII)—4 hours

PHYSICS (Physics III)—2 hours

INDUSTRIAL CHEMISTRY (Chemistry XXIV)—3 hours

PROPERTIES OF MATERIALS AND ALLOYS (Mechanical Engineering X)—2 hours, first half-year

ENGINEERING OF POWER PLANTS (Mechanical Engineering XI)—1 hour, second half-year

ELEMENTS OF ELECTRICAL ENGINEERING (Electrical Engineering VII)—1 hour, first half-year, 2 hours, second half-year

GRAPHICS AND DRAWING (Mechanical Engineering I and II—2 hours, and 2 afternoons drawing-room practice

SHOP-WORK (Mechanical Engineering VI and VII)—3 afternoons, and Saturdays shop-practice

Summer Vacation

SUMMER CLASS IN SHOP-WORK (Mechanical Engineering VIII)—100 hours in 3 weeks in June

MEMOIR, on some subject to be assigned by the Professor of Mechanical Engineering (Mechanical Engineering XXXVII)

* See pages 35 to 144 for departmental statements.

COURSES IN MECHANICAL ENGINEERING

Third Year

(to be offered in 1899–1900)

ANALYTICAL MECHANICS (Mechanics I)—3 hours

THE STEAM-ENGINE (Mechanical Engineering XII)—2 hours ; (Mechanical Engineering XV)—Laboratory practice first half-year, and 2 hours second half-year

THE STEAM-BOILER (Mechanical Engineering XIII)—2 hours ; (Mechanical Engineering XIV)—Laboratory practice second half-year

MACHINERY AND MECHANISM (Mechanical Engineering XVIII)—2 hours

MACHINE DESIGN (Mechanical Engineering XXII)—1 hour. (To be assigned)

RESISTANCE OF MATERIALS (Civil Engineering V)—3 hours and 2 afternoons first half-year, and 2 hours and 2 afternoons second half-year

GRAPHICAL STATICS (Civil Engineering VI)—2 hours and 2 afternoons drawing-room, second half-year

TESTING OF MATERIALS OF ENGINEERING (Mechanical Engineering XVI)—2 afternoons, part of each half-year, and Saturdays laboratory work

MECHANICAL ENGINEERING LABORATORY (Mechanical Engineering XVII)—2 afternoons, part of each half-year

DYNAMO AND MOTOR PRACTICE (Electrical Engineering I)—3 hours second half-year Professor CROCKER and Mr. SEVER

ELECTRIC LIGHTING (Electrical Engineering IV)—3 hours second half-year

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering X)—2 afternoons, part each half-year

DRAWING (Mechanical Engineering XXII)—1 afternoon

VACATION CLASS IN MECHANICAL ENGINEERING (Mechanical Engineering XXXV) *optional.* Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

Summer Vacation

MEMOIR, on subjects to be assigned by the Professor of Mechanical Engineering (Mechanical Engineering XXXVIII)

DYNAMIC ENGINEERING ALTERNATIVE, OR COURSE A

NOTE—The first three years are the same for all Alternatives

Fourth Year

(To be offered in 1900–1901)

THERMODYNAMICS (Mechanics IV)—3 hours, first part of first half-year

HEAT AND ITS APPLICATIONS (Mechanical Engineering XIX)—2 hours, and laboratory practice

PUMPS, PUMPING, AND SPECIAL ENGINES (Mechanical Engineering XXVII)—Special lectures, latter part of first half-year

MOTORS (Mechanical Engineering XX)—1 hour, second half-year

DYNAMICS OF MOTORS (Mechanical Engineering XXI)—1 hour, second half-year

MACHINE DESIGN (Mechanical Engineering XXII)—1 hour, first half-year

RAILWAY MOTIVE POWER AND MACHINERY (Mechanical Engineering XXVI)—3 hours, first part of first half-year. (Civil Engineering IX)—3 hours, second part of first half-year, and second half-year

HYDRAULICS (Civil Engineering XII)—2 hours, first half-year

MASONRY STRUCTURES (Civil Engineering IV)—1 hour

STEAM-ENGINE DESIGN (Mechanical Engineering XXVIII)—2 hours, second half-year

VALVE-GEARING FOR ENGINES (Mechanical Engineering XXIII)—1 hour, and drawing-room, second half-year

WORK-SHOP ECONOMICS AND SPECIFICATIONS (Mechanical Engineering XXX)—1 hour, second half-year

SHOP AND FACTORY ORGANIZATION AND MANAGEMENT (Mechanical Engineering XXIX)—1 hour, second half-year

MINE PLANT (Mining VII)—2 hours

ELECTRIC POWER (Electrical Engineering II)—3 hours, first half-year

ELECTRIC RAILWAY (Electrical Engineering VIII)—2 hours, second half-year.

HYDRAULIC MOTORS LABORATORY (Mechanical Engineering XXV), second half-year

HEAT AND STEAM ENGINEERING LABORATORY (Mechanical Engineering XXIV)—In connection with thesis work. (To be assigned)

DRAWING (Mechanical Engineering XXVIII)

THESIS, original investigation or professional problem on a subject approved by the Professor of Mechanical Engineering

ELECTRICAL ALTERNATIVE, OR COURSE B

NOTE—The first three years are the same for all Alternatives

Fourth Year

(To be offered in 1900–1901)

THERMODYNAMICS (Mechanics IV)—3 hours, first part of first half-year

HEAT AND ITS APPLICATIONS (Mechanical Engineering XIX)—2 hours, and laboratory practice

PUMPS, PUMPING, AND SPECIAL ENGINES (Mechanical Engineering XXVII)—Special lectures, latter part of first half-year

MOTORS (Mechanical Engineering XX)—1 hour, first half-year

DYNAMICS OF MOTORS (Mechanical Engineering XXI)—1 hour, second half-year

RAILWAY MOTIVE POWER AND MACHINERY (Mechanical Engineering XXVI)—3 hours, first part of first half-year. (Civil Engineering IX)—3 hours, latter part of first half-year and second half-year

WORK-SHOP ECONOMICS AND SPECIFICATIONS (Mechanical Engineering XXX)—1 hour, second half-year

STEAM-ENGINE DESIGN (Mechanical Engineering XXVIII)—2 hours, second half-year

SHOP AND FACTORY ORGANIZATION AND MANAGEMENT (Mechanical Engineering XXIX)—1 hour, second half-year

HYDRAULICS (Civil Engineering XII)—2 hours, first half-year

ELECTRIC POWER (Electrical Engineering II)—3 hours, first half-year

ELECTRICAL ENGINEERING (Electrical Engineering III and IV)—1 hour, first half-year, and 3 hours, second half-year

ELECTRICAL ENGINEERING (Electrical Engineering VI)—1 hour

THEORY OF ALTERNATING CURRENTS (Mechanics VIII and IX)—3 hours

ELECTRICAL RAILWAY (Electrical Engineering VIII)—2 hours, second half-year

HYDRAULIC MOTORS LABORATORY (Mechanical Engineering XXV), second half-year

HEAT AND STEAM ENGINEERING LABORATORY (Mechanical Engineering XXIV)—In connection with thesis work

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering XI and XII)—3 afternoons

DRAWING (Mechanical Engineering XXVIII)

THESIS, original investigation or professional problem on a subject approved by the Professor of Mechanical Engineering

MINING ALTERNATIVE, OR COURSE C

NOTE—The first three years are the same for all Alternatives

Fourth Year

(To be offered in 1900–1901)

THERMODYNAMICS (Mechanics IV)—3 hours, first part of first half-year

HEAT AND ITS APPLICATIONS (Mechanical Engineering XIX)—2 hours, and laboratory practice

MOTORS (Mechanical Engineering XX)—1 hour, first half-year

DYNAMICS OF MOTORS (Mechanical Engineering XXI)—1 hour, second half-year

PUMPS, PUMPING, AND SPECIAL ENGINES (Mechanical Engineering XXVII)—Special lectures, latter part of first half-year

WORK-SHOP ECONOMICS AND SPECIFICATIONS (Mechanical Engineering XXX)—1 hour, second half-year

SHOP AND FACTORY ORGANIZATION AND MANAGEMENT (Mechanical Engineering XXIX)—2 hours, second half-year

HYDRAULICS (Civil Engineering XII)—2 hours, first half-year

EXCAVATION AND TUNNELLING (Mining I)—3 hours

BORING AND SHAFT SINKING (Mining II)—3 hours, part of half-year

MINE ENGINEERING (Mining VI)—2 hours, first half-year, and 1 hour second half-year

ORE DRESSING (Mining IV)—2 hours

ORE-DRESSING LABORATORY (Mining V)—Afternoons for 3 weeks

MINE PLANT (Mining VII)—3 hours first half-year and 2 hours, second half-year

HEAT AND STEAM ENGINEERING LABORATORY (Mechanical Engineering XXIV)—If required in connection with thesis work

ELECTRIC POWER (Electrical Engineering II)—3 hours, first half-year

ELECTRIC RAILWAY (Electrical Engineering VIII)—2 hours, second half-year

DRAWING, if required in connection with thesis work. (To be assigned)

THESIS, original investigation or professional problem on a subject approved by the Professor of Mechanical Engineering

COURSE IN ARCHITECTURE

First Year

Architectural Engineering (Architecture XIVa*)—2 hours
Elements of Architecture (Architecture VIII)—3 hours, second half-year
Ancient Architectural History (Architecture I)—3 hours
History of Ancient Ornament (Architecture V)—1 hour.
Specifications (Architecture XIIIa2)—1 hour
Building Materials (Architecture XIIIb2)—1 hour
Elementary Design (Architecture XV)—1 hour
Projections, Shades, and Shadows (Architecture X)—3 hours, first half-year
Architectural Essays (Architecture XVII)—1 hour
Drawing, Architectural and Freehand (Architecture IXa and b)—17 hours
Historical Drawing (Architecture IXc)—2 hours
Surveying (Civil Engineering I) *optional*—2 hours, second half-year

Summer Vacation

Surveying (Civil Engineering XV) *optional*—6 weeks field work
Summer Work, Historical Memoir, Sketches and Drawings

Second Year

Perspective (Architecture XI)—8 lectures, December and January
Architectural Engineering (Architecture XIVb)—3 hours
Modern Architectural History (Architecture III)—2 hours, first half-year; 2 hours and 15 hours research, second half-year
Archæology, French (Architecture XVI)—2 hours
History of Modern Ornament (Architecture VII)—1 hour
Theory of Color (Architecture IVc)—1 hour, first half-year
Composition (Architecture IVd)—1 hour, second half-year
Specifications (Architecture XIIIa2)—1 hour
Building Materials (Architecture XIIIb2)—1 hour
Design, Problems (Architecture XV)—15 hours, first half-year
Historical Design (Architecture III amd XV)—3 hours, second half-year
Architectural Essays (Architecture XVII)—1 hour
Drawing, Freehand (Architecture IXb)—6 hours

Summer Vacation

Surveying (Civil Engineering XVI) *optional*—6 weeks field work
Summer Work, Historical Memoirs, Sketches and Drawings

* See pages 35 to 144 for departmental statements

COURSE IN ARCHITECTURE

Third Year

ARCHITECTURAL ENGINEERING (Architecture XIVc)—5 hours

MODERN ARCHITECTURAL HISTORY (Architecture III)—2 hours, first term; 2 hours and 15 hours research, second term

ARCHÆOLOGY, GERMAN (Architecture XVI)—2 hours

HISTORY OF MODERN ORNAMENT (Architecture VII)—1 hour

THEORY OF COLOR (Architecture IVc)—1 hour, first half-year

COMPOSITION (Architecture IVd)—1 hour, second half-year

SPECIFICATIONS (Architecture XIIIa2)—1 hour

BUILDING MATERIALS (Architecture XIIIb2)—1 hour

DESIGN, PROBLEMS (Architecture XV)—15 hours, first half-year

HISTORICAL DESIGN (Architecture III and XV)—3 hours, second half-year

ARCHITECTURAL ESSAYS (Architecture XVII)—1 hour

DRAWING, FREEHAND (Architecture IXb)—2 hours

Summer Vacation

SUMMER WORK, memoir on some subject assigned by the Professor of Architecture

Fourth Year

ADVANCED ARCHITECTURAL HISTORY (Architecture XVIII)—2 hours

ADVANCED ARCHITECTURAL DESIGN (Architecture XIX)—25 hours

ADVANCED ARCHITECTURAL ENGINEERING AND PRACTICE (Architecture XX and XXI)—17 hours, and 15 hours practice

DESCRIPTIVE GEOMETRY (Architecture XII)—1 hour first half-year

STEREOTOMY (Architecture XII)—1 hour, second half-year

DRAWING, FIGURE, ORNAMENT, AND WATER-COLORS (Architecture IXb)—2 hours

THESIS, ORIGINAL DESIGN AND DISCUSSION

By-Laws

1 At the beginning of the first year each student must elect which of the several courses he intends to pursue, and must thenceforth abide by his election unless permitted by the Committee on Admissions and Examinations to make a change.

2 No student is allowed to pursue more than one course at a time.

Admission

3 Candidates for admission to the first class, at its formation, must be of the age of *eighteen years*, complete; and for admission to advanced standing there will be required a corresponding increase of age; but this rule may be modified when, in the opinion of the Committee on Admissions and Examinations, there are sufficient reasons to justify its relaxation.

Enrolment and Certificates

4 An applicant for admission must file with the Bursar, at least one week before the day fixed for the entrance examinations, a certificate from his principal instructor containing a definite statement of the subjects which he is qualified to offer for examination.

No student will be examined in June, 1898, whose name is not enrolled and whose certificate is not filed on or before Wednesday, June 1st, of the same year; nor will any student be examined in September, 1898, whose name is not enrolled and whose certificate is not filed on or before Monday, September 19th.

Blank forms of the certificate required can be had upon application to the Bursar. In the case of students expecting to be examined at a distance, the names must be enrolled and the certificates filed one week earlier.

5 Every candidate must, before admission, present a certificate of good moral character from his last teacher, or from some citizen in good standing, and students from other institutions must bring certificates of honorable dismission.

Entrance Examinations

6 Candidates for the first class must pass satisfactory examinations in:

Mathematics:

Arithmetic: greatest common divisor and least common multiple, common and decimal fractions, percentage, interest, square root, and the metric and other ordinary systems of weights and measures. Special importance is attached to accuracy and facility in calculation.

Algebra (*a*): factors, common divisors and multiples, fractions, equations of the first degree, with one or more unknown quantities, involution, evolution, the doctrine of exponents, radicals, radical equations reducible to equations of the first degree, and putting problems into equations.

Algebra (*b*): quadratic equations, and such equations with one or more

unknown quantities as can be solved by the methods of quadratic equations, ratio and proportion, arithmetical and geometrical progressions, the binominal theorem for positive entire exponents, and the principle of undetermined coefficients including its application to series and partial fractions.

Geometry (*a*) : plane geometry, including the solution of simple original exercises and numerical problems.

Geometry (*b*) : solid and spherical geometry, including the solution of simple original exercises and numerical problems

Plane trigonometry : the elementary principles of logarithms, the use of tables of logarithms of numbers and of logarithms of trigonometric functions, and the solution of right-angled and of oblique-angled plane triangles.

Physics :

On the equivalent of Ganot's smaller treatise (Peck's Ganot's Natural Philosophy).

In 1898 and succeeding years candidates will be examined in accordance with the following requirements :

The equivalent of Hall's and Bergen's text-book of physics ;

An approved laboratory course of at least forty experiments, actually performed at school by the candidate.*

Chemistry :

On the non-metallic elements and their important compounds with each other, as given in the ordinary high-school text-books.

In 1898 and succeeding years candidates will be examined in accordance with the following requirements :

The non-metallic elements and their important compounds with each other as usually given in high-school text-books.

An approved laboratory course of at least forty experiments actually performed at school, by the candidate; as given in Remsen's, or Armstrong and Norton's Laboratory Manuals.*

English :

No applicant will be accepted in English whose work is notably defective in point of spelling, grammar, idiom, punctuation, or division into paragraphs.

1. READING AND COMPOSITION. The candidate will be required to present evidence of a general knowledge of the subject-matter of the prescribed books, and to answer simple questions on the lives of their authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to show the candidate's power of clear and accurate

* For the present students who may be admitted with conditions in laboratory work in chemistry or physics will be given opportunity to perform the required experiments in the laboratories of the university.

expression, and will call for only a general knowledge of the substance of the books. In place of a part or the whole of this test, the candidate may present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The candidate is expected to read intelligently all the books prescribed. He should read them as he reads other books; he is not expected to know them minutely, but to have freshly in mind their most important parts. In preparation for this part of the requirement, it is important that the candidate shall have been instructed in the fundamental principles of rhetoric.

Candidates offering this part of the requirement as a preliminary subject should be prepared on the books prescribed for the year in which they are to take their final examination, *i. e.*, preliminary candidates who are to be examined on part 2 of the English requirement in 1899 should be prepared on the books in the 1899 list.

The books prescribed for this part of the examination are as follows:

In 1898: Milton's Paradise Lost, Books I and II; Pope's Iliad, Books I and XXII; The Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Ancient Mariner; Southey's Life of Nelson; Carlyle's Essay on Burns; Lowell's Vision of Sir Launfal; Hawthorne's House of the Seven Gables.

In 1899: Dryden's Palamon and Arcite; Pope's Iliad, Books I, VI, XXII, and XXIV; The Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Ancient Mariner; De Quincey's Flight of a Tartar Tribe; Cooper's Last of the Mohicans; Lowell's Vision of Sir Launfal; Hawthorne's House of the Seven Gables.

In 1900: Dryden's Palamon and Arcite; Pope's Iliad, Books I, VI, XXII, and XXIV; The Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Scott's Ivanhoe; De Quincey's Flight of a Tartar Tribe; Cooper's Last of the Mohicans; Tennyson's Princess; Lowell's Vision of Sir Launfal.

2 STUDY AND COMPOSITION. This part of the examination presupposes the thorough study of each of the works named below. The examination will be upon subject-matter, literary form, and grammatical and logical structure.

After 1898 the candidate may be required, in addition, to answer questions involving the essentials of English grammar, and questions on the leading facts in those periods of English literary history to which the prescribed works belong.

In connection with the reading and study of the required books, parallel or subsidiary reading should be encouraged, and a considerable amount of English poetry should be committed to memory. The essentials of English grammar should not be neglected in preparatory study.

The books prescribed for this part of the examination are as follows:

In 1898: Shakspere's Macbeth; Burke's Speech on Conciliation with America; De Quincey's Flight of a Tartar Tribe; Tennyson's Princess.

In 1899: Shakspere's Macbeth; Milton's Paradise Lost, Books I and II; Burke's Speech on Conciliation with America; Carlyle's Essay on Burns.

In 1900: Shakspere's Macbeth; Milton's Paradise Lost, Books I and II;

Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison.

French:

The elements of French Grammar.

The ability to read easy French, such as Rambaud's Petite Histoire de la Civilisation Française.

The admission examination in French is divided into two parts designed to test, respectively (1st), the ability of the applicant to read at sight French prose of ordinary difficulty; (2d), his knowledge of elementary grammar.

The ability to read ordinary French prose will be acquired, it is believed, by the reading, in addition to the study of Grammar, of three hundred or more 12mo pages of French. It is recommended that the reading be divided between historical narrative and popular works on science, including the names of most of the articles in daily use; a few very simple descriptive passages may also be included. Although no work is prescribed, the attention of teachers in preparatory schools is called to Alfred Rambaud's Petite Histoire de la Civilisation Française (Paris, A. Colin), and Louis Figuier's Les Grandes Inventions (Paris, Hachette).

By knowledge of elementary grammar is meant knowledge of the paradigms, including the four conjugations of regular verbs, as well as the most frequently used irregular verbs and those belonging to the same classes as *sentir*, *paraître*, *craindre*, etc.; knowledge of elementary syntax, including the place of personal pronouns when used as direct or indirect objects. This knowledge may be tested as well by translation in French of very simple English sentences as by direct questioning.

The following grammatical nomenclature will be adhered to on the examination papers:—Article: definite, indefinite, and partitive. Noun: common, proper. Adjective: qualifying and determinative, the latter including demonstrative, possessive, numeral, indefinite, and interrogative. Pronoun: personal, demonstrative, possessive, indefinite, relative, and interrogative. Verbs: auxiliary, regular, irregular, and impersonal; active and passive; transitive and intransitive. Adverbs of quantity, time, place, and manner. Prepositions. Conjunctions. Interjections. For the moods and tenses of verbs the following will be adhered to: Indicative: simple tenses—present, imperfect, future, past definite or preterite; compound tenses—past indefinite, pluperfect, future anterior, past anterior. Subjunctive: simple tenses—present, imperfect; compound tenses—past, pluperfect. Conditional: present, past. Imperative: present, past. Infinitive: present, past. Participle: present, past.

The preparation for the examination, if spread over two years, ought to occupy no less than three weekly recitations of one hour each; good results might be obtained in one year with daily recitations of forty-five minutes each.

The teachers in preparatory schools will greatly help the work of the school if they will bear in mind that definite knowledge is what is required, and not merely acquaintance with the forms of the language. A firm grasp of the most important rules and most constant forms will be found much more useful than

the knowledge of some curious exception. Pronunciation, although it cannot be tested at the entrance examination, which is wholly in writing, must not be neglected. Applicants ought to be able to read aloud intelligibly what they are expected to be able to translate.

The use of good English is expected on the part of the candidates in their examination books, whether in answers to direct questions or in translations from French to English.

German :

The elements of German Grammar.

The ability to read easy German, such as Andersen's or Grimm's Märchen.

The object of the entrance examination in German is to determine whether the candidate has a sufficient knowledge of grammar, vocabulary, and idiom, to read easy German prose at sight. Hauff's and Grimm's Märchen are suggested merely to indicate the grade of work ; any easy stories or plays can be used in preparation with equally good results.

An adequate preparation for this examination ought to extend over two years, with three recitations a week, at the ordinary pace of school work.

Instruction in grammar should be thorough with regard to the ordinary paradigms and every-day constructions ; and the ordinary connective words —auxiliaries, prepositions, conjunctions, etc.—should be learned early and thoroughly. But grammar-drill should, after the first introductory lesson, follow rather than precede abundant practice in reading. Pupils should prepare lessons of suitable length from the text, and be held to strict account, not only for the vocabulary, but also for the grammatical points in the lesson. At least 100 pages should be covered in this careful way in the course of preparation. Besides this kind of work, the pupils should have daily practice in translation at sight, and should read in that way not less than 200 pages.

It is recommended that the required preparation of German as set forth above should be supplemented by the reading of Gore's German Science Reader.

History :

On the equivalent of Johnston's History of the United States.

Freehand Drawing : For candidates for admission to the School of Architecture.

The ability to draw correctly any simple geometrical figure from dictation, and to enlarge or reduce from a copy in outline, an anthemion, an acanthus leaf, a design of iron scroll-work, or some similar ornament. For this work correct construction and accuracy of proportion are more important than fineness of execution.

Out-of-town examiners are requested to apply to the School of Architecture for examples of the sort of drawings that are required.

Freehand Drawing : For candidates for admission to the other schools.

Including the ability to sketch, both in outline and with proper shading,

ordinary objects, such as a house, a simple piece of machinery, a piece of flat ornament from a copy, a group of geometrical solids.

Each applicant must execute the required drawings in the presence of the examining officer. No certificate of drawings made elsewhere will be accepted.

7 Entrance examinations will be held at the University, and for the convenience of candidates for admission residing at a distance from New York, at other principal cities, on Wednesday, June 8th, 1898, and days following, and on Monday, September 26th, 1898, and days following. By permission of the Committee on Admissions and Examinations, on suitable application, entrance examinations may be held at any time during the session.

Examinations for entrance at other cities will be held in June 1898 by the following gentlemen :

Belmont, California, by W. T. REID, A.M., *Head Master of the Belmont School.*
Bozeman, Montana, by P. W. TRAPHAGEN, Ph.D., F. C. S.
Charleston, South Carolina, by P. E. CHAZAL, A.B., E.M.
Chicago, Illinois, by E. G. BARRATT, C.E.
Cleveland, Ohio, by R. F. JOPLING, E.M.
Concord, New Hampshire, by C. S. KNOX, A.M.
Denver, Colorado, by T. B. STEARNS, E.M.
St. Louis, Missouri, by W. B. POTTER, A.M., E.M.
Salt Lake City, Utah, by R. H. TERHUNE, E.M.

Upon application arrangements will be made for examinations in June 1898 at other places if it proves practicable to do so.

8 The applicant may present himself in a portion of the subjects in June, and complete his examinations in September of the same year. But no examination for admission will be allowed to stand to the credit of an applicant for a period longer than sixteen months.

Preliminary Examinations

9 An applicant duly enrolled, who has filed the required certificate from his principal teacher, may, at the appointed examination time in June of the year preceding his admission into the first class, but not at any other time, be examined on certain portions of the foregoing subjects. Such an applicant may offer at the preliminary examination the following subjects :

Arithmetic.
Algebra (*a*).
Geometry (*a*).
Physics.
Chemistry.
French.
German.
English, Reading, and Composition.
History.
Freehand Drawing.

The following subjects may not be offered at the preliminary examination :

Algebra (*b*).
Geometry (*b*).
Trigonometry.
English, Study, and Composition.

Diplomas and Certificates in Lieu of Examination

10 Diplomas and certificates of colleges and schools of science will be accepted, for the ground they cover, in lieu of examination, *if satisfactory to the examining officers*. Each examining officer decides the question for his special department. No certificates in lieu of examinations will be accepted, except those of degree-granting institutions, including the Regents of the University of the State of New York.

Admission and Conditions

11 The Committee on Admissions and Examinations will decide, and report to the Dean, within twelve days after the conclusions of the examinations, those candidates who have been admitted, those who have been admitted conditionally, and those who have been rejected.

12 Students deficient in minor studies may be admitted conditionally ; each case being considered on its merits by the Committee on Admissions and Examinations. Students admitted conditionally at the beginning of the academic year must satisfy all conditions in Mathematics within three months, and other conditions within a year or at such time as may be determined by the Committee on Admissions and Examinations. Students who fail to satisfy their entrance conditions within the time specified may be dropped from the roll.

13 The Committee on Admissions and Examinations have jurisdiction over all questions arising under the rules relating to entrance examinations.

Advanced Standing

14 Candidates for advanced standing must pass satisfactory examinations upon the studies stated in Section 6, and also upon those pursued by the class up to the time at which they propose to enter.

15 No candidates are admitted later in the course than the beginning of the fourth year.

Attendance

16 Prompt attendance is required upon all exercises. Each instance of tardiness will be counted as half an absence.

17 Attendance during all the hours specified on the scheme of attendance adopted by the faculty is obligatory.

18 Any student who shall have been absent from more than ten per cent. of the exercises in any subject, shall not be entitled to examination in that subject.

19 Every student is expected and required to keep an account of his absences, and should he exceed the limit allowed in any course, he must present to the Dean, during the week preceding the stated examination, satisfactory explanation of all his absences, or be debarred from the examination ; but he may present himself at the examination in the fall for debarred and deficient students. If the absences are excessive the Committee on Admissions and Examinations may make such further ruling in regard to his examination as may seem to them to be required in his case.

20 Any student who, being present on the grounds, shall absent himself from any exercise, or shall leave the grounds during the hours at which his attendance is due, shall be liable to removal from the roll of his class.

21 Students are required to attend all the exercises and pass all the examinations of the class and course to which they belong unless specially excused by the Committee on Admissions and Examinations.

22 By special permission of the Committee on Admissions and Examinations, students may attend exercises not required in the class or course to which they belong, provided that such attendance does not interfere with the required exercises of their class and course. Such students are held to the same rules of attendance and examination in the extra studies as in the required studies of their class and course.

23 Any student who shall have passed a satisfactory examination in Columbia College in any study forming a part of one of the regular courses in the Schools under the Faculty of Applied Science will not be required to pursue that study.

Examinations and Standing

24 Examinations will be held at the end of the first half-year (semi-annual), or at the end of the year (annual), on all subjects taught. Examinations for debarred and deficient students will be held during the last ten days of the summer vacation. Examinations at times other than here specified are not held except upon order of the Committee on Admissions and Examinations, for reasons of weight.

25 Any student found guilty of fraudulent practices at examination will be summarily dismissed.

26 Every officer will keep a record of the scholarship of each student, and at the close of every half-year, and after the stated examination has been held each officer of instruction will report to the Dean a list of all the students who have attended his instruction, indicating their proficiency by numbers on a maximum of 10, a mark below 6 constituting a failure to pass. Each student's record will be transmitted to him at the close of each year.

27 Any student, who shall fail to pass in any of his studies at the regular semi-annual or annual examination, may present himself for a second examination at the end of the summer vacation ; failing to pass in this second examination he may be dropped from his class and required to repeat the subject with the next following class, but the Committee on Admissions and Examinations may exercise its discretion in excusing him from attendance on such a subject, holding him to such other requirements as may seem advisable ; failing a third time to pass a satisfactory examination in any study, his name may be dropped from the roll.

28 A student dropped from the roll of his class will not be permitted to attend any of the exercises of the said class without the consent of the Committee on Admissions and Examinations given for reasons of weight.

29 Students failing in any subject will not be permitted to take advanced studies for which, by reason of such deficiency, they are not properly prepared ; nor will they be allowed to attend any summer school without special permission of the Committee on Admissions and Examinations.

30 A student reported in grade 6 in any subject shall be warned by the instructor in charge thereof that his work is so unsatisfactory that unless improved, it may result in his being found deficient at the close of the year.

31 A student reported in grade 6 in a majority of the subjects pursued by him in any year, and not reported in grade 8, or higher, in the greater part of the remainder of such subjects, will not be permitted to go on with his class without the consent of the Committee on Admissions and Examinations given for reasons of weight, but he may enter the next succeeding class, and pursue such subjects as may be required of him by the Committee.

32 Absence from the regular semi-annual or annual examination, unless excused by the Committee on Admissions and Examinations, will be counted a failure to pass that examination. This rule shall apply to examinations for delinquents held at the end of the summer vacation.

33 When a student fails to receive his degree with his class, and returns at some later period to present himself for examination for the same, he will be required to comply with all the requirements at the later date, and the same rule shall apply to students who have received one degree and make application for another.

Memoirs and Summer Work

34 During the vacations following the close of each year, memoirs on subjects, which will be assigned, are required of students in the courses of Electrical Engineering, of Analytical and Applied Chemistry, and of Architecture. The time specified for the completion and handing in of memoirs in chemistry and electrical engineering is November 1st of each year ; for other memoirs and summer work the time specified is the second Monday in October.

35 Students of the second, third, and fourth classes who fail to hand in the memoirs, drawings, and other summer work required of them under the rules at the specified time, shall not be permitted to hand them in until the beginning of the next academic year, and failing in this latter requirement they shall be dropped from the roll of the class. This requirement may be waived, for reasons of weight, in the case of students of the fourth class.

Special Students

36 Graduates of the School of Mines, the School of Chemistry, the School of Engineering, the School of Architecture, and of other institutions of like grade and standing, may pursue any subjects taught in the schools for which they are properly qualified.

37 Permission to pursue special courses is sometimes given, for reasons of weight, to persons of mature age who are not graduates, but special students are not desired in the regular professional courses.

The Laboratories and Drawing Academies

38 No student will be allowed in a laboratory or drawing academy at a time when his attendance there is not due. During hours assigned for practical work in each of the laboratories, and in the drawing academies, the attendance of students will be required. A record of the daily attendance and of the progress of each student will be kept by the officer in charge.

39 The attendance of students of the first and second years in the drawing-room at such times as they are not engaged at lectures, between 9.30 A.M. and 1.30 P.M., is obligatory for students in engineering and architecture, for such hours and times as may be selected by the Professors of Engineering and Architecture.

Order

40 Good order and gentlemanly deportment are required of all students, as a condition of attendance.

41 Smoking is prohibited in the University buildings.

NOTE.—To render unnecessary many inquiries it is here stated that there are no dormitories attached to the University at present.

Excursions

During the session, the students may visit the different machine-shops, electrical and metallurgical establishments, and chemical works of the city and its environs, and excursions are frequently organized for this purpose.

During the academic year, excursions are offered to points of geological interest near New York, on all Saturdays and holidays of the fall and spring. Few other localities afford so extensive and so accessible exposures as the vicinity of New York.

Class in Mechanical Engineering—During the third year students in the courses of engineering may join a volunteer class in practical mechanical engineering under the supervision of the professor of mechanical engineering.

Summer Schools

Summer School in Surveying—During the latter part of the vacations following the close of the first and second years, students in the courses of mining, civil and sanitary engineering, and metallurgy, are required to join the summer school in surveying under the direction of the instructor in civil engineering.

During the latter part of the vacation following the close of the third year, students in the courses of mining and civil engineering are required to attend a class in railroad surveying for a period of four weeks. The students in the mining engineering course have the option of attending this class in the vacation following the close of the second year. This class is under the direction of the instructor in civil engineering.

Summer School in Geodesy—During the vacation following the close of the third year, students in the courses of civil and sanitary engineering are required to attend a summer school in geodesy for six weeks. The class is under the supervision of the professor of astronomy.

Summer School in Mining—During the vacation following the close of the third year, students in the courses of mining engineering and metallurgy are required to visit the mines and engage in actual work or study under the superintendence of the adjunct professor of mining. This summer school is open to second-year students, *without conditions*, as an optional course.

Summer School in Metallurgy—In connection with the summer school in mining one week, at least, is devoted to practical metallurgy.

Summer School in Geology—The Trustees of the University have made an appropriation for a Summer School in Geology which defrays the expenses of a small squad of advanced students for about one month each summer, with the Professor of Geology. In connection with the summer school in practical mining, at least one week is devoted to practical field geology, for the students in the courses of mining engineering and metallurgy.

APPARATUS SUPPLIES

1. Students may purchase apparatus of any of the dealers in the city.

2. To avoid inconvenience and expense to the students, and to secure a proper selection, the Chemical department undertakes, at considerable trouble and expense, to lend apparatus on the following conditions :

(*a*) Each student engaged in laboratory work who draws apparatus must make a deposit of forty dollars ($40) with the Bursar, which deposit will be credited to him on the ledger. In the case of excessive draughts of apparatus an additional deposit may be required.

(*b*) Each student shall be entitled, on presenting his receipt at the apparatus room, to draw the regular set of apparatus for qualitative, quantitative, or organic analysis, for assaying, for microscopy, or for bacteriology, on account of his deposit, and from time to time to obtain ordinary articles which he may need, and these will be charged to him. At the end of the year he will be credited with those articles which he returns in good order, and the value of those which he has injured or broken will be deducted from his deposit.

(*c*) The apparatus room will be open for issuing apparatus every day at convenient hours.

(*d*) No charge is made for ordinary chemicals.

REGISTER OF STUDENTS

ABBREVIATIONS

(A).....Course in Architecture
(C).....Courses in Chemistry
(C E).....Course in Civil Engineering
(E E).....Course in Electrical Engineering
(Mech E).....Course in Mechanical Engineering
(M E).....Course in Mining Engineering
(M).....Course in Metallurgy

FOURTH YEAR CLASS

Arendt, Morton (E E).....New York
Beatty, Alfred Chester (M E).....New York
Bennett, George Lewis (C E).....Brooklyn
Bentley, Wray Annin (C).....Brooklyn
Bostwick, William Arthur (M).....New York
Brown, Herbert Doty (C E)—A.B. *Columbia*.....New York
Buck, Victor Buchanan, Jr. (M).....New York
Burns, William Gibson (E E).....New York
Burnside, Charles Howard (A)—B.S. *Penn*.....Oskaloosa
Caswell, Kenneth Lincoln (A).....New York
Conover, John Thompson (E E).....New York
Daly, Edwin Howell (E E).....New York
Dunn, Arthur Diamond (E E).....New York
Eckerson, Charles Hammond (M E).....Closter, N. J.
Elleau, Louis Antoine (M E)—Mech. E. *Stevens Inst*.....New York
Ferguson, Garwood (C E).....Paterson, N. J.
Foote, Emerson, Jr. (E E).....New York
Gallatin, Albert Rolaz (E E)—A.B. *Columbia*.....New York
Geppert, Richard M. (M E).....Newark, N. J.
Goodman, Joseph (C E).....New York
Gottschall, Louis (A).....New York
Gumaer, Alfred Hermann (A).....Jersey City, N. J.
Haight, Charles Sidney (A).....New York

Haskell, Gouverneur Morris (E E).....Bloomfield, N. J.
Hastings, Charles Fanning (C E).....New York
Hill, Rowland Francis, Jr. (M E).....New York
Hodgson, Eugene Helms (C).....Brooklyn
How, Richard Willis, Jr. (C E).....New York
Hutchins, Gordon Lines (M E).....Brooklyn
Jones, William Phelps (E E).....New York
Joseph, Theodore Harold (E E).....New York
Krumb, Henry (M E).....Brooklyn
Le Prince, Joseph Albert Augustin (C E).....New York
Levine, Edmund Julius (C).....New York
Lewis, Clarence MacKenzie (C E).....New York
Lichtenstein, Howard (E E).....New York
Lighthipe, William Wilson (E E).....New York
Livingston, Johnston, Jr. (E E).....Islip, N. Y.
Lobo, Gustavo (E E).....New York
Lowenberg, Laurent (E E)—Ph.B. *Yale*.....Cincinnati, O.
Lowther, Christopher Meyer (E E).....Riverside, Conn.
Lucas, George Latimore (C E).....New York
Lydecker, Irving Smith (M E).....New York
McClure, William James (E E).....New York
McLellan, Hugh (A).....New York
Machen, Henry Bennett (C E).....New York
Magruder, Hugh Sisson (A)—A.B. *Johns Hopkins*.....Baltimore, Md.
Mason, Francis (C E)—A.B. *Harvard*.....Brooklyn
Menline, Isaac (C E).....New York
Mitchell, Henry Bedinger (E E).....Flushing, N. Y.
Newman, Mortimer Lewis (E E).....New York
Otto, Charles Ludwig (A).....Brooklyn
Pattberg, Otto Frederick (M E).....Jersey City, N. J.
Peck, Thomas Bloodgood, Jr. (E E).....New York
Raisman, Aaron Israel (C E).....Newark, N. J.
Raymond, Max (C E).....New York
Reyna, Juan Estevan (E E).....Tlaquilto, Mexico
Sessinghaus, Gustavus (M E).....St. Louis, Mo.
Smith, William Allen, Jr. (M E).....New York
Stillwell, Albert Gladding (C).....Brooklyn
Sutro, Harry Herbert (C).....New York
Tatlock, James Lloyd (C E).....Pelham Manor, N.Y.
Thomas, William Shephard (M E)—C.E. *Rensselaer Pol. Inst.*, Oakland, Cal.
Tibbals, Rowland Gilbert (E E)—C.E. *Columbia*.....Brooklyn
Titcomb, Harold Abbot (M E)—A.B. *Shurtleff*.....Brooklyn
Trapote, Ramiro (C E).....Pontevedra, Spain
Tudor, William, Jr. (M E)—A.B. *Harvard*.....Boston, Mass.
Van Voorhis, Bartow White, 2d (E E).....West Brighton, N. Y.
Vredenburg, Watson, Jr. (C E).....New York

Fourth Year Class.....69

THIRD YEAR CLASS

Aylmer-Small, Charles Sidney (E E).....Passaic N. J.
Beadel, Henry Ludlow (A).....New Brighton, N. Y.
Beck, Oscar Charles (C).....New York
Belden, William Allen (E E).....New York
Berger, John (C E)—B.S. *N. Y. City College*.....New York
Blondel, Theodore, Jr. (A).....New York
Blum, Edward (A).....New York
Boyd, John Dalzell (A).....New York
Cabot, John, Jr. (M E).....New York
Cairns, Bayard Snowden (A)--A.B. *N. Y. City College*.....New York
Carpenter, Henry Cannon (E E).....New York
Casamajor, Walter (C) .....Brooklyn
Chapman, Howard (A).....Brooklyn
Clark, William Glasgow (E E).....St. Louis, Mo.
Coffin, Tristram Roberts (C E).....New York
Cogan, Henry Manning (E E).....Brooklyn
Crawford, Henry Erastus (M E).....New York
Delson, Isadore (C E).....New York
Dickerson, Frank Secor (E E).....Great Neck, N. Y.
Dieterich, Alfred Elliot (C E).....New York
Durham, Leicester (C E).....Brooklyn
Ehrenreich, James Jacob (E E).....New York
Falk, Myron Samuel (C E).....New York
Fechheimer, Abraham Lincoln (A).....Cincinnati, O.
Fisher, Henry (C)—B.S. *N. Y. City College*.....New York
Fliess, Robert Anton (E E).....New York
Foster, Oscar Riker (M).....Brooklyn
Frank, Augustus Alphonsus (E E)..... New York
Godwin, Philander Hanford (C E).....New York
Goldstein, Edwin Sydney (A).....Cincinnati, Ohio
Gunn, George Bain (C E).....East Orange, N. J.
Hall, Harold Newman (A).....Brooklyn
Hawkins, Stephen Olney (A).....Brooklyn
Heike, Rudolph Ernest (C).....Jersey City, N. J.
Henderson, Henry Howison (C E).....Yonkers, N. Y.
Hudson, Percy Kierstead (M E).....New York
Jung, Andrew Norwood (E E)..... .....Brooklyn
Kneeland, Frederick Revell (C).....New York
McIntyre, Henry Knox (E E).....New York
Machen, Charles Hudson (E E).....New York
Madan, Julian Appleton (C).....New York
Mortimer, Henry Coit, Jr. (E E).....New York
Murphy, George Robert (E E)—A.M. *St. Francis Xavier*....Hoboken, N. J.
Noyes, Charles Ellsworth (M E).....Lisbon, N. H.
O'Connor, James William (A).....New York
Orner, George Darmon (E E).....New York

Perkins, Henry Augustus (E E)—A.B. *Yale*.....Hartford, Conn.
Ripley, William Howe (E E)—A.B. *Columbia*.....New York
Riter, Levi Evans, Jr. (M E).....Salt Lake City, Utah
Rogers, Alexander Parker (C E)—Ph. B. *Yale*.....New York
Ros, Juan Pablo, (M E)—A.B. *Univ. of Havana*.....Cienfuegos, Cuba
Saunders, George Crosby (C E)—B.S. *N. Y. City College*.....New York
Schroeder, Henry (E E).....New York
Schulte, Edward Delavan Nelson (E E)—B.S. *Trinity*.....Philadelphia, Pa.
Scudder, Hewlett, Jr. (E E)—A. B. *Yale*.....New York
Simonson, Lawrence Mason (C E).....New York
Slaven, Ralph Edward (E E).....New York
Stratford, Thomas Alexander (C E).....Brooklyn
Tilt, Benjamin Bricklyn (E E).....New York
Waldo, Rhinelander (E E).....New York
Ware, Arthur (A).....New York
Weinstein, Maximilian (C E).....New York
Wolff, Hans Hermann (C E).....New York

Third Year Class.....63

SECOND YEAR CLASS

Acton, Harry Wagner (E E).....Saybrook, Conn.
Ambler, Nathan Babcock (E E).....Chatham, N. Y.
Bard, Ernest Robinson (E E)..... New York
Bates, Louis William (E E).....Brooklyn
Baumann, Albert Philip (M E).....New York
Benedict, Eli (A).....New York
Bigelow, Richard (E E).....Ridgewood, N. J.
Briggs, Walter Preston (E E).....New York
Brown, Hugh Auchincloss (E E).....Rutherford, N. J.
Burns, Dawson Jabez (E E).....New York
Cameron, Walter Scott (C)—A.B. *N. Y. City College*.....New York
Cassard, William John, Jr. (E E).....New York
Chibas, Louis Floro (M E)—A.B. *Santiago de Cuba*.....Guantanamo, Cuba
de Mille, William Churchill (E E).....Pompton, N. J.
Doyle, John Francis (M E)—A.B. *Manhattan College*.. Constableville, N. Y.
Eccles, David Charles (C).....Brooklyn
Entz, George Gilbert (A).....New York
Erdal, Oscar Wilson (M E).....Johannesburg, South African Republic
Feldman, Max (C E).....New York
Ford, Harry Clifford (C E)..... ....New York
Fuente, Jesus de la (M E)..... .....Nadadores, Mexico
Goodenough, Robert Judson (C).....Brooklyn
Goodwillie, Robert Hogue (E E).....New York
Greene, Myron Evans (E E).....New York
Griffiths, William James, Jr. (E E).....Mt. Vernon, N. Y.
Heineken, William Price (E E).....New Brighton, N. Y.

Hitchcock, Charles Knap, Jr. (M E)—A.B. *Columbia*.....Bayonne, N. J.
Hooper, Henry Northey, Jr. (A).....Brooklyn
Hulbert, Charles Southard (E E).....New York
Imlach, William Bertram (C).....New York
Immediato, Gerardo (C E).....Montclair, N. J.
James, Marshall Thomas (A).....Jersey City, N. J.
Jessup, Warren Canfield (E E).....Augusta, Ga.
Josephson, Edgar (C).....Brooklyn
Kaufman, Arthur (A).....New York
Kebler, John Leonard (E E).....New York
Kipp, Burdette (C E).....New York
Koscherak, Ferdinand Eli (E E).....New York
Lacey, Richard Austen (M E).....Brooklyn
LeCount, Llewellyn (C E).....New York
Lewis, Meyer Henry (C E).....New York
Lockward, Lynn Grover (A).....Caldwell, N. J.
Longacre, Orleans, Jr. (M E).....Spuyten Duyvil, N. Y.
McClelland, James Farley (M E).....Poughkeepsie, N. Y.
McCulloch, Robert Austin (A)—A.B. *Columbia*.....New Brighton, N. Y.
McLain, Ralph Clapp (E E).....New York
McLintock, Archibald (M E).....New York
Magnus, Benjamin (E E).....New York
Mainzer, Herbert Richard (A).....New York
Mehrbach, William (C).....New York
Morrill, William Charles (E E).....New York
Müller, Julius (E E).....New York
Nelson, Francis Augustus (A).....New York
Oakley, Ainsley Cornell (E E).....New York
O'Connor, William Aloysius (A).....New York
Oddie, Harold Hoyle (C E).....New York
Parker, Asa Warren, Jr. (M E)—A. B. *Columbia*.....Brooklyn
Pfeiffer, Clarendon Henry (E E).....New York
Pitt, Rafford (C E).....New Rochelle, N. Y.
Plonsky, Samuel Edward (A)—A.B. *N. Y. City College*.....New York
Reilly, Joseph Aloysis (C E).....New York
Rionda, Manuel Enrique (E E).....New York
Rogers, Edward Washburn (E E).....New York
Rossi, Louis Mansfield (M E).....Perth Amboy, N. J.
Runge, Albert (C E)—C. E. *Penn. Military College*.....Flushing, N. Y.
Ryker, Henry Benson (M E).....New York
Satterlee, Edward Lansing (A).....New York
Seward, George Oulton (C).....East Orange, N. J.
Simpson, William Thornton (E E).....New York
Smith, Burnett (C).....New York
Smith, Byron Weed (E E).....New York
Solomon, Nathan Clarence (E E)—B.S. *N. Y. City College*.....New York
Spiller, Robert Lawrence (C E).....New York

Steven, Frank Ransom (E E).....Brooklyn
Strauss, Lester (M E).....New York
Tiemann, Hugh Philip (C).....New York
Van Deerlin, Reginald Wellesley (C E).....New York
Van Wagenen, Hubert, Jr. (A).....New York
Van Winkle, Edward (E E).....Jersey City, N. J.
Vom Baur, Carl Hans (E E).....New York
Wagner, Otto (M E).....Red Bank, N. J.
Weekes, Frederic Robert (M E).....New York
Wemlinger, Julius Ralph (C E).....New York
Wessels, Eugene Herbert (E E).....New York
Williams, John Townsend, Jr. (A).....New York
Wright, Ralph Garrigue (C).....St. Louis, Mo.

Second Year Class.....86

FIRST YEAR CLASS

Abramovich, Oscar (C E).....New York
Adenaw, Arthur Paul Frederick (A).....New York
Allen, Cleveland (C E).....New York
Allen, Jerome Ripley (A)—A.B. *Williams*.....Greenfield, Mass.
Armstrong, Homer (M E).....Great Falls, Mont.
Bard, Sidney White (E E).....New York
Bartberger, Edward William (A).....Pittsburg, Pa.
Baumgarten, William Edward (A).....New York
Baxter, Herbert Thornton (C).....Brooklyn
Bayne, Howard (E E).....New York
Beadel, Gerald Woodward (E E).....New Brighton, N.Y.
Bell, Clarence Francis (M E).....New York
Bernheim, George Benjamin (C).....New York
Blagden, Phillips (M E).....New York
Boehm, Henry Abraham (A).....New York
Boroschek, Leopold (C)—B.S. *N. Y. City College*.....New York
Bos, George (C E).....New York
Boyd, Alexander (A).....Chicago, Ill.
Brandon, Vivian Isaac (E E).....New York
Briesen, Harold (E E).....Weehawken, N. J.
Brittingham, Arthur DeWitt (E E).....Mt. Vernon, N. Y.
Britton, Henry Berry (E E).....New York
Brodie, Orrin Lawrence (C E).....Pittsburg, Pa.
Brown, Caxton (E E).....New York
Buchhotz, Gustavus William (C E).....New York
Buckingham, Tracy Sturges (M E).....New York
Budds, Benjamin Courtney (A).....New York
Burt, Harry Radcliff (C E).....Larchmont, N. Y.
Campbell, Edward Flint (C E).....Larchmont, N. Y.
Carrington, Waring (M E).....Newark, N. J.

Cary, John Wilson (M E).....Denver, Col.
Clark, Theodore (A)—B.S. *Univ. of Minnesota*.....St. Cloud, Minn.
Clarke, Henry Joseph Bowie (Mech E).....New York
Clinch, Edward Sears, Jr. (E E).....New York
Colt, Morgan (A).....Shinnecock Hills, N. Y.
Corbin, Irving (E E).....Brooklyn
Cornell, Russell Todd (M E).....Garrisons, N. Y.
Cowperthwait, Frederic Nichols (E E).....New York
Coykendall, Frank (C E).....Rondout, N. Y.
Cregier, Abbott Morgan (Mech E).....Mt. Vernon, N. Y.
Cross, Charles Edwin (E E).....Brooklyn
Curry, Robert (A).....New Brighton, N. Y.
Darrach, Bradford, Jr. (C E).....Elizabeth, N. J.
Denny, Robert Campbell (C E).....Newark, N. J.
Dickinson, Harold Thomas (M E).....New York
Dixon, James (E E).....Flushing, N. Y.
Doud, Charles Hamilton (E E)—A.B. *Yale*.....Scranton, Pa.
Dougherty, Richard Erwin (C E).....New York
DuBois, William Chandler (C E).....Bayonne, N. J.
Dusenbury, Arthur Newcomb (E E).....New York
Edson, Herman Aldrich (E E).....Shelter Island Heights, N. Y.
Eller, Frederich William (E E).....New York
Faile, Malcolm Burrell (E E).....New York
Falk, Kaufman George (C).....New York
Fellows, Cornelius, Jr. (Mech E).....Morristown, N. J.
Fiedler, Edward Charles, Jr. (E E).....New York
Fisher, Frederick Vankleeck (Mech E).....White Plains, N. Y.
Fisher, Robert Mulford (M E).....Mt. Vernon, N. Y.
Frankel, Joseph Delwin (E E).....New York
Goerwitz, William (E E).....New York
Golden, Percy Norris (E E).....Elizabeth, N, J.
Goode, Edmund Lowry (M E).....Nyack, N. Y.
Grace, William Russell, Jr. (C E).....New York
Gramm, Frederick Emil (A).....New York
Green, Robert Corbould (E E).....Newtown, N. Y.
Gregg, Harry Westervelt (E E).....New York
Havill, Owen Augustine (E E)—A.B. *St. Francis Xavier*....Jersey City, N.J.
Hayt, Robert Olcott (C E).....Corning, N. Y.
Heidelberg, Max Gustave (A).....New York
Hermann, Bernhard Frederic (E E).....New York
Hewitt, Edward Shepard (A).....Brooklyn
Hildburgh, Sidney Cornelius (C E).....New York
Hildreth, Thomas Flagler (C).....Lockport, N. Y.
Hill, Lawrence (A).....New Haven, Conn.
Hoadley, Charles Wisson (E E).....New York
Hochlerner, Tobias (E E).....New York
Hubbard, George Canning, Jr. (C).....Tottenville, N. Y.

Jones, Alexander Lassen (M E).....New York
Kafka, Hugh, Jr. (A).....New York
Kaiser, Charles Sumner (A).....Wilkesbarre, Pa.
Kellogg, Frederic Freeman (E E).....New York
Keppel, David (M E).....New York
Knight, Harold Bartlett (A).....New York
Lang, Eugene Jerome (A).....New York
Lawlor, Joseph Francis (E E)—A.B. *St. Francis Xavier*.....New York
Lawrence, Augustine Neil (E E).....New Brighton, N. Y.
Lay, Charles Downing (A).....Stratford, Conn.
Lefferts, Franklin Baker (A).....New York
Le Prince, Leon Fernand (A).....New York
Le Prince, Louis Adolphe Whitley (C).....New York
Levine, Albert Julius (E E).....New York
Lindenmeyr, Ludwig (A).....New York
Lindsay, Lewin Seton (M E).....West New Brighton, N. Y.
Lindsay, William Godson (C).....New York
Lockwood, Frank Thornton (A).....Paterson, N. J.
Loney, Frederick Roosevelt (A).....Skaneateles, N. Y.
Ludlam, William Kennedy (C E).....New York
Maclay, Robert, Jr. (E E).....New York
Mapes, Charles Maynard (C E).....New York
Martin, John Sayre, Jr. (E E).....New York
Meehan, John Augustin (Mech E).....New York
Meeks, Reginald (E E).....New York
Meissner, William Christen (E E).....New York
Miehling, Rudolph (E E).....New York
Miller, George Alfred, Jr. (E E).....Montclair, N. J.
Miller, George Jared (C).....Brooklyn
Mills, Henry Jayne (M E).....Brooklyn
Mitchell, William Ellis (M E).....New York
Moffat, Edward Stewart, Jr. (M E).....Scranton, Pa.
Moran, William Edgar (A).....New York
Morse, Robert Gorham (Mech E)—A.B. *Harvard*.....Boston, Mass.
Moulton, Robert Hurt (A).....Memphis, Tenn.
Murphy, Harry Augustine (E E).....New York
Myers, David Moffat (Mech E).....New York
Neu, Samuel Sidney (E E).....New York
Newcomb, Charles Hoffer (E E).....Brooklyn
Oakley, Walton Livingston (E E).....New York
Olmstead, Henry Bailey (E E).....Batavia, N. Y.
O'Shea, John Edmund (E E).....New York
Page, Robert Weise (C).....Brooklyn
Parker, Lindsay Reed (E E).....Brooklyn
Parsons, Isaac Dayton (E E).....New York
Phillips, Joseph Francis (C E).....New York
Pinkney, Cornelius Sidell (C E).....New York

Poillon, Howard Andrews (M E).....New York
Potter, Robert Knight (A).....New York
Powell, William Robert (A).....Radnor, O.
Prout, Glover Perin (C E).....Nutley, N. J.
Rae, James Giles (C E).....New York
Ray, David Heydorn (A)—A.B. *N. Y. City College*.....New York
Read, Clark Potter (Mech E).....New York
Reiley, Robert Joseph (A).....New York
Rionda, José Bernardo (E E).....New York
Rising, Herbert Robinson (C).....Newark, N. J.
Robinson, Fletcher Albert (A).....New York
Roell, Antone Joseph (C E).....New York
Ross, Herbert Weed (E E).....Newark, N. J.
Sage, Darrow (E E).....New York
Sanger, Elias Louis (C E).....Dallas, Texas
Schanck, William Hunt (A).....New York
Scharf, Harry Warren (E E).....Middletown, N. Y.
Scherrer, Joseph Anton (A).....Indianapolis, Ind.
Schimper, Frans Johannis von Maltitz (M E).....New York
Schlegel, John William (C).....New York
Schmidt, Carl Gustav Adolph, Jr. (Mech E).....New York
Schwerin, Clarence Maurice (M E).....New York
Serrano, Vincent (C E).....New York
Sloane, Thomas O'Conor, Jr. (E E).....South Orange, N. J.
Smith, Charles Hoyt (A).....Larchmont, N. Y.
Smith, Clyde Wilbur (M E).....Ocean Grove, N. J.
Smith, Frank Gerard (E E).....New Rochelle, N. Y.
Smith, Leonard Bacon, Jr. (E E).....New York
Steinback, Gustave Erwin (A).....Brooklyn
Stewart, John Burgoyne (E E).....New York
Strassburger, William Joseph (A).....Allegheny, Pa.
Stromeyer, William Theodore (E E).....New York
Swart, Harold Arthur (Mech E).....Mt. Vernon, N. Y.
ter Meer, Henry Charles (E E).....Hoboken, N. J.
Thayer, Reginald Holden (M E).....Yonkers, N. Y.
Thompson, Moreton Reginald (E E).....New York
Thurston, Louis Stewart (E E).....Nutley, N. J.
Tweedy, James Belcher (M E).....New York
Tyler, Albert Clinton (A)—A.B. *Princeton*.....Wyoming, Ohio
Ulke, Darwin (E E).....Washington, D. C.
Underhill, Arthur Dudley (C).....Yonkers, N. Y.
Van Horne, John Reginald (Mech E).....Jersey City, N. J.
von Schrenk, Arnold (E E).....New York
Walsh, Louis Angelo (A).....Waterbury, Conn.
Watermann, Harry Simons (C E).....Yonkers, N. Y.
Weaver, Harold Bready (A).....New Rochelle, N. Y.
Welles, Germaine (Mech E).....Rochester, N. Y.

Weston, Edward Faraday (E E) ..... Newark, N. J.
Williams, Alexander Shives (C E) ..... New York
Wilson, Lester Godfrey (Mech E) ..... New York
Wolff, John Benjamin (C E) ..... New York
Wood, Norton Ellsworth (A) ..... Fort Slocum, N. Y.
Wooding, Edmund von Richen (E E) ..... Leroy, N. Y.
Woodward, Robert Simpson, Jr. (C E) ..... Montclair, N. J.
Zipser, Morris (C E) ..... New York

First-Year Class 179

SPECIAL STUDENTS

Blair, Edgar (A) ..... Des Moines, Iowa
Borden, William Henry, Jr. (Mech E) ..... Goldsboro, N. C.
Daley, Dennis Webster (A) ..... Parkersburgh, W. Va.
Dill, Henry Taylor (A) ..... St. Louis, Mo.
Elliott, Robert Huger (A) ..... New Orleans, La.
Freund, John, Jr. (A) ..... Hastings, N. Y.
Gilman, Roger (A)—A.B. *Harvard* ..... Cambridge, Mass.
Havard, Edwin Warner (A) ..... East Orange, N. J.
Holbrook, John Swift (A)—A.B. *Harvard* ..... Stamford, Conn.
Kurfiss, Selby Harney (A) ..... Kansas City, Mo.
Landman, Joseph (M E) ..... New York
Newman, Ezekiel Simeon, Jr. (M.E) ..... El Paso, Texas
Nolan, Thomas (A)—M.S. *Univ. of Rochester*, Ph.B. *Columbia* ..... New York
Stewart, Francis Gray (A)—C.E. *Princeton* ..... New York
Wachter, Harry Wilcox (A) ..... Toledo, Ohio

Special Students 15

GRADUATE STUDENTS

Following each student's name are printed in *italics* the subjects pursued by him under the Faculty of Applied Science; if the student is enrolled under another Faculty as well, the name of that Faculty is given in Roman type.

FOR THE DEGREE OF MASTER OF ARTS

Adams, Ernest Kempton ..... New York
Yale University, Ph.B. (1896)
Columbia University, E.E. (1897)
Electrical Engineering, *Mechanical Engineering*; Philosophy

Campbell, Alexander James ..... Sancelito, Cal.
Yale University, Ph.B. (1893)
Mining, *Electrical Engineering*; Pure Science, Philosophy

Firth, Elmer Wallace ..... Brooklyn
Cornell University, C.E. (1895)
Civil Engineering; Pure Science, Philosophy

Ford, Arthur Hillyer ..... Madison, Wis.
University of Wisconsin, B.S. (1895); E.E. (1896)
Electrical Engineering; Pure Science, Political Science

Hildburgh, Leo Walter.....New York
Columbia University, E.E. (1897)
Electrical Engineering, *Mining*, *Metallurgy*; Pure Science.

McClelland, James Bruce.....New York
Columbia University, B.S. (1897)
Civil Engineering, *Electrical Engineering*; Pure Science

Prentice, John Hill.....New York
Columbia University, A.B. (1897)
Mining; Pure Science

For Degree of Master of Arts..... 7

FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

McKim, Alexander Rice.....New York
Massachusetts Institute of Technology, B.S. (1886)
Columbia University, A.M. (1896)
Architecture; Political Science

For Degree of Doctor of Philosophy..... 1

Total..... 8

SUMMARY

Undergraduate Courses:		
Fourth-Year Class.....	69	
Third-Year Class.....	63	
Second-Year Class.....	86	
First-Year Class.....	179	
		397
Special Students.....		15
Graduate Students:		
For Degree of Master of Arts.....	7	
" " " Doctor of Philosophy.....	1	
		8
Students primarily registered under this faculty.....		420
Students from other faculties of the University:		
From the College.....		24
From the School of Pure Science.....		7
Total.....		451

SCHOOL OF POLITICAL SCIENCE

The following departments are represented in the Faculty :

POLITICAL ECONOMY AND STATISTICS
FINANCE
ECONOMIC THEORY
SOCIOLOGY
HISTORY
POLITICAL PHILOSOPHY
CONSTITUTIONAL LAW
ADMINISTRATIVE "
INTERNATIONAL "
CRIMINAL "
ROMAN LAW AND COMPARATIVE JURISPRUDENCE

Officers of the Faculty

JOHN W. BURGESS, Ph.D., LL.D. ..... *Dean and Ex-Officio Member of the University Council*

FRANK J. GOODNOW, LL.D. ..... *Secretary*

RICHMOND MAYO-SMITH, Ph.D. ..... *Elected Delegate to the University Council*

The Faculty

SETH LOW, *President*

JOHN W. BURGESS, Ph.D., LL.D., *Professor of Political Science and Constitutional Law*

RICHMOND MAYO-SMITH, Ph.D., *Professor of Political Economy and Social Science*

MUNROE SMITH, A.M., J.U.D., *Professor of Roman Law and Comparative Jurisprudence*

FRANK J. GOODNOW, LL.D., *Professor of Administrative Law*

EDWIN R. A. SELIGMAN, LL.B., Ph.D., *Professor of Political Economy and Finance*

HERBERT L. OSGOOD, Ph.D., *Professor of History*

WILLIAM A. DUNNING, Ph.D., *Professor of History and Political Philosophy*

JOHN BASSETT MOORE, A.B., *Hamilton Fish Professor of International Law and Diplomacy*

FRANKLIN H. GIDDINGS, Ph.D., *Professor of Sociology*

JOHN B. CLARK, Ph.D., *Professor of Political Economy*

JAMES HARVEY ROBINSON, Ph.D., *Professor of History*

WILLIAM MILLIGAN SLOANE, Ph.D., L.H.D., *Seth Low Professor of History*

EDMOND KELLY, A.M., *Lecturer on Municipal Politics*

GEORGE L. BEER, A.M., *Lecturer on History*

Other Officers

WILLIAM R. SHEPHERD, Ph.D., *Prize Lecturer 1896–98*

WILLIAM Z. RIPLEY, Ph.D., *Prize Lecturer 1896–99, on Physical Geography and Ethnology*

GEORGE JAMES BAYLES, Ph.D., *Prize Lecturer 1897–1900 in Ecclesiastical Organization and Government in the United States*

ARTHUR M. DAY, M.A., *Assistant in Economics*

GENERAL STATEMENT

The Faculty of Political Science has charge of the university courses of study and research in political and social science, including history, economics, and public law.

The School of Political Science was opened on Monday, the fourth day of October, 1880.

It is the purpose of the school to give a complete general view of all the subjects of public policy, both internal and external, from the threefold point of view of history, law, and philosophy. The prime aim is therefore the development of all the branches of the political and social sciences. The secondary and practical objects are :

(*a*) To fit young men for all the political branches of the public service.

(*b*) To give an adequate economic and legal training to those who intend to make journalism their profession.

(*c*) To supplement, by courses in public law and comparative jurisprudence, the instruction in private municipal law offered by the Faculty of Law.

(*d*) To educate teachers of political and social science.

To these ends courses of study are offered of sufficient duration to enable the student not only to attend the lectures and recitations with the professors, but also to consult the most approved treatises upon the political sciences and to study the sources of the same.

Young men who wish to obtain positions in the United States Civil Service—especially in those positions in the Department of State for which special examinations are held—will find it advantageous to follow many of the courses under the Faculty of Political Science. Some of the subjects upon which applicants for these positions are examined are treated very fully in the curriculum of the school. Thus, extended courses of lectures are given on political geography and history, diplomatic history and international law, government, and administration.

The work in economics and sociology falls under three heads, viz. : the university courses of instruction in the various departments of economic and social science, the work in the statistical laboratory, and the "field work," or practical work in connection with the Charity Organization Society, the Brooklyn Bureau of Charities, the University Settlement Society of New York City, and the East Side House. These are fully explained in the detailed circular of the School of Political Science.

ADMISSION AND ATTENDANCE

Admission to the School of Political Science is ordinarily granted to students who have completed the curriculum of some college in good standing at least to the close of the Junior year. Other persons of suitable age and attainments may be admitted, to pursue special or partial courses, with the consent of the Dean and of the instructor. The lectures are also open to the public, on payment of an auditor's fee, and with the consent of the Dean and of the instructor. Auditors do not have, and cannot receive, any university recognition whatever. There are no formal examinations for admission. Applications for admission to the School of Political Science are received at any time by the Secretary, but it is generally advisable that they be presented, if possible, at the beginning of the academic year.

Students enrolled either in the General, in the Union, or in the Jewish Theological Seminary, in the City of New York, who may be designated for the privilege by the authorities of those institutions and accepted by the President of Columbia University, are admitted to the courses offered by the Faculty of Political Science free of charge for tuition.

By the terms of an alliance between Columbia University and Teachers College, at Morningside Heights, duly qualified students of Teachers College are permitted to enter courses offered by the Faculty of Political Science either as candidates for degrees or as special students.

All of these institutions offer reciprocal privileges to students of Columbia University.

An application for admission may be made by filling out and depositing a registration blank at the office of the Dean of the Faculty of Political Science, or at such other place as may be designated from time to time, for the purpose of registration.

Every student is required to file a list of his studies for the academic year at the time he registers, or within one week thereafter, at the office of the Bursar. If he subsequently wishes to make any change in his studies he must file written notice of his wish at the Dean's office, and must obtain the assent of the Dean.

Immediate written notice must be given to the Dean of any change of address.

Admission to the School of Political Science does not imply admission to candidacy for a degree. The conditions of candidacy for the several degrees are given below.

ADMISSION TO OTHER COURSES

Any duly matriculated university student is at liberty to combine courses of study and investigation under this faculty with courses offered by the College or by the Faculties of Philosophy, Law, Medicine, Pure Science, and Applied Science without any additional fee.

Undergraduate studies of particular value to students in this school are as follows:

	Hours per week.
Outline of Mediæval History (1st half-year)	2
Outline of Modern History (2d half-year)	2
Outline of European History since 1815 (1st half-year)	2
American History (1st half-year)	2
Elements of Political Economy (2d half-year)	2
Economic History (1st half-year)	2

Among the cognate courses given by the Faculty of Philosophy are :

History of philosophy, 2 hours a week ; ethics, 2 hours a week ; biological anthropology, 2 hours a week ; readings in Gaius and Ulpian, 1 hour a week ; readings in Anglo-Saxon law ; courses in the various modern languages, and others.

FEES

(See page 17.)

CANDIDATES FOR A DEGREE

Students are received as candidates for the degree of Bachelor of Arts, Master of Arts, Master of Laws, or Doctor of Philosophy.

If the applicant is a candidate for a degree, he must file a certificate, sufficient to furnish evidence of his completion of the Junior year, or if he holds a degree from any institution, he must file diplomas or certificates sufficient to furnish evidence of such degree or degrees. Blanks for this purpose may be secured at the Dean's office. Certificates of graduation or dismissal from institutions of learning in foreign countries are also accepted. The certificates should be accompanied by catalogues or calendars of the colleges or other institutions of advanced grade at which the student has previously studied, which must be marked so as to show clearly his course of study there. This condition may be dispensed with in the case of those colleges and institutions whose bachelor's degree is recognized by the University Council as a basis for the higher degrees.

Students may present themselves for examination for a degree at any time during the year whenever the requirements as to residence and an essay or dissertation have been complied with.

COURSE OF INSTRUCTION

For the courses offered in 1897–98 see departmental statements, as below. For more detailed account of the courses and for the tender of 1898–99, application should be made for circular of the School of Political Science.

History and Political Philosophy, page 84
Public Law and Comparative Jurisprudence, page 91
Economics and Social Science, page 54

Seminars

Outside of the regular instruction in the various subjects by lecture, it is the intention to furnish the students of the school an opportunity for special inves-

tigation of historical, legal, economic and social questions under the direction of the professors. This is done by means of original papers prepared by the students. The papers are read before the professor and the students, and are then criticised and discussed. There will be at least one seminar in each subject. The number of meetings and the topics to be discussed are determined each year. Attendance at the seminar in the major subject is necessary on the part of candidates for the degree of Master of Arts or Doctor of Philosophy.

There are also preliminary seminars in history and political economy, designed primarily for those who are not fully prepared for the more advanced work. A preliminary seminar taken by a candidate for the degree of Bachelor of Arts will count for one hour toward the fifteen hours necessary for a degree.

ORDER OF STUDIES

The following courses are open to Seniors in Columbia College, and are recommended by the Faculty as introductory to the other lectures:

History

7. Transition Epochs of American History.
8. Introduction to Modern European History.
15. Constitutional History of England.
22. Constitutional History of the United States.
40. History of Political Theories.

Economics and Social Science

3. Historical and Practical Political Economy.
4. Science of Finance.
5. Financial History of the United States.
6. Industrial and Tariff History of the United States.
16. Applied Anthropology.

REGISTER OF STUDENTS

Following each student's name are printed, in italics, the subjects pursued by him under the Faculty of Political Science ; if the student is enrolled under another faculty as well, the name of that faculty is given in roman type.

Ashley, Roscoe Lewis.....Los Angeles, Cal.
University of Rochester, A.B., 1894.
Political Economy and Finance, Sociology and Statistics, Constitutional Law.

Biggs, Charles Louis.....New York
St. Stephen's College, A.B., 1893.
American History, Administrative Law, Sociology.

Bissell, Arthur Harry.....Montclair, N. J.
Yale University, A.B., 1897.
Sociology and Statistics, Political Economy and Finance, American History.

Bogart, Ernest Ludlow.....Yonkers, N. Y.
Princeton University, A.B., 1890 ; A.M., 1896.
University of Halle, Ph.D., 1897.
Political Economy and Finance, Sociology and Statistics.

Bowman, George Sheldon.....Salem, Va.
Roanoke College, A.B., 1894.
European History, American History, Political Economy and Finance.

Briggs, Howard Appleton.....Lansingburg, N. Y.
Williams College, A.B., 1897.
Sociology and Statistics, Political Economy and Finance ; Philosophy.

Burke, William Maxwell.....New York
Oberlin College, A.M., 1897.
Political Economy and Finance, Sociology and Statistics, Administrative Law.

Chase, Allan McCleery Parker.....Cambridge, Mass.
Harvard University, A.B., 1890 ; A.M., 1892.
Political Economy and Finance, American History, Sociology and Statistics.

Clyde, John Peet.....Waucoma, Ia.
Iowa University, Ph.B., 1894.
Sociology and Statistics, Church History ; Philosophy.

Cutright, William Bernard.....Buckhannon, W. Va.
W. Virginia Conference Seminary, B.P., 1892.
W. Virginia University, A.B., 1895.
Political Economy and Finance, Sociology and Statistics, Constitutional Law.

Davenport, Frederick Morgan.....New Milford, Pa.
Wesleyan University, A.B., 1889.
Sociology and Statistics, European History, Political Economy and Finance.

Dawson, Ray ..... Boonton, N. J.
Comparative Jurisprudence, *International Law*, *Constitutional Law*, *Political Economy and Finance*, *American History;* Law.

Dennis, Alfred Lewis Pinneo ..... New York
Princeton University, A.B., 1896.
European History, *American History;* Law.

Doggett, Walton Hall ..... Laramie, Wyo.
Sociology and Statistics.

Duggan, Stephen Pierce ..... New York.
College of the City of New York, B.S., 1896; M.S., 1897.
Constitutional Law, *European History*, *Political Economy and Finance.*

Dynes, John Howard ..... Cleveland, O.
Adelbert College, A.B., 1891.
Columbia University, A.M., 1897.
Sociology and Statistics, *Political Economy and Finance*, *American History.*

Fairlie, John Archibald ..... Cambridge, Mass.
Harvard College, A.B., 1895.
Harvard University, A.M., 1896.
Administrative Law, *Political Economy and Finance*, *Constitutional Law.*

Fisher, James Turner Biddulph ..... Bedford Park, N. Y.
St. John's College, A.B., 1895.
Sociology and Statistics, *Political Economy and Finance;* Philosophy, Pure Science.

Flett, George Custer ..... Somers, Wis.
University of Wisconsin, LL.B., 1893.
Sociology and Statistics, *European History;* Philosophy.

Fox, Cornelius Fred ..... Bronxville, N. Y.
American History, *Political Economy and Finance;* Philosophy.

Fry, William Henry ..... Brooklyn
Columbia College, A.B., 1897.
American History, *European History;* Philosophy.

Gabriel, Mardich Simbad ..... New York
Political Economy and Finance.

Gates, Carl Martel ..... Dorset, Vt.
Amherst College, A.B., 1897.
Sociology and Statistics.

Gilbert, Clinton Wallace ..... Brooklyn
University of Rochester, A.B., 1891.
American History, *Political Economy and Finance.*

Hall, Frederick Smith ..... Montclair, N. J.
Wesleyan University, A.B., 1893.
Political Economy and Finance.

Harris, Herbert Staley ..... Rochester, N. Y.
Princeton University, A.B., 1897.
Sociology and Statistics, *Political Economy and Finance;* Philosophy.

Hashi, Hajime ..... Iwaki, Japan
European History.

Hiester, Anselm Vinet.....Annville, Pa.
Lebanon Valley College, B.S., 1887.
Franklin and Marshall College, A.B., 1889.
New York University, A.M., 1896.
Sociology and Statistics, *Political Economy and Finance*, *History*, *Political Philosophy*.

Holt, Hamilton.....New York
Yale University, A.B., 1894.
Administrative Law.

Jeschke, Harry.....Cleveland, O.
Adelbert College, A.B., 1895.
Sociology and Statistics, *Political Economy and Finance*, *European History*.

Johnson, Allen.....Lowell, Mass.
Amherst College, A.B., 1892 ; A.M., 1895.
European History, *American History*, *Constitutional Law*.

Jones, Thomas Jesse.....Greenfield, O.
Marietta College, A.B., 1897.
Sociology and Statistics.

Judson, Edward.....New York
Brown University, A.B., 1865 ; A.M., 1868.
European History.

Karns, William Arthur.....New York
Political Philosophy, *Political Economy and Finance*.

Lamson, Elliott Woodbury.....New York
Brown University, A.B., 1893.
Cornell University, A.M., 1894.
Political Philosophy, *Sociology and Statistics ;* Philosophy.

Lange, George Edward.....New York
American History, *Political Philosophy*, *European History*, *Political Economy and Finance*, *Administrative Law*.

Long, Maxwell Washburn.....Flushing, L. I.
Political Philosophy, *Political Economy and Finance*.

Loper, George Gordon.....New York
European History, *American History*.

McComas, Henry Clay, Jr.....Baltimore, Md.
Johns Hopkins University, A.B. 1897.
Sociology and Statistics, *European History ;* Philosophy.

McCrea, Roswell Cheney.....Morristown, Pa.
Haverford College, A.B., 1897
Political Economy and Finance, *Sociology and Statistics*, *American History*.

McGregor, Robert Gardner.....Utica, N. Y.
Hamilton College, A.B., 1897.
Sociology and Statistics.

Marshall, Benjamin Tinkham.....Boston, Mass.
Dartmouth College, A.B., 1897.
Sociology and Statistics.

Merriam, Charles Edward, Jr.....Hopkinton, Ia.
Lenox College, A.B., 1893.
State University of Iowa, A.B., 1895.
Columbia University, A.M., 1897.
Political Philosophy, *American History*, *Administrative Law*.

Meyer, Charles Garrison.....New York
Political Philosophy, *American History*, *Political Economy and Finance.*

Miller, Wallace Elden.....Springfield, O.
Ohio Wesleyan University, A.B., 1897.
Sociology and Statistics, *Political Economy and Finance*, *American History.*

Moffett, Samuel Erasmus.....New York
American History, *Political Philosophy*, *Political Economy and Finance.*

Monroe, Paul.....New York
Franklin College, B.S., 1890.
University of Chicago, Ph.D., 1897.
American History, *Sociology and Statistics.*

Neal, John Randolph.....Rhea Springs, Tenn.
University of Tennessee, A.B., 1893.
Vanderbilt University, A.M., 1894.
Constitutional Law and Administrative Law, *Comparative Jurisprudence*, *Political Economy and Finance.*

North, Francis Reid.....New York
Wesleyan University, A.B., 1897.
American History, *European History*, *International Law.*

Osborn, Thomas Dewitt.....Sheepshead Bay, L. I.
Political Philosophy, *American History*, *Political Economy and Finance;* Law.

Pope, Jesse Eliphalet.....Minneapolis, Minn.
University of Minnesota, B.S., 1895; M.S., 1897.
Political Economy and Finance, *Sociology and Statistics.*

Powell, Irwin Augustus.....New York
American History, *Political Economy and Finance.*

Ratzell, Joseph Perry.....Sanderton, Pa.
Franklin and Marshall College, A.B., 1896.
Sociology and Statistics, *Political Economy and Finance*, *Church History.*

Rauscher, John Charles.....New York
Sociology and Statistics.

Schaff, Anselm Edwin.....Merrick, L. I.
Political Philosophy, *Political Economy and Finance.*

Schaper, William August.....St. Joseph's, Wis.
University of Wisconsin, B.L., 1895.
Sociology and Statistics, *Political Economy*, *American History.*

Schwarz, Charles Carroll Fulton.....New York
American History, *Political Economy and Finance.*

Sheppard, James Joseph.....New York
Harvard College, A.B., 1894.
American History, *European History*, *Political Economy and Finance.*

Sites, Clement Moore Lacey.....Washington, D. C.
Ohio Wesleyan University, A.M., 1890.
National Law School, LL.B., 1890.
Constitutional Law and Administrative Law, *Political Economy and Finance*, *Sociology and Statistics.*

Stone, Nahum Isaac.....New York
Odessa Gymnasium, Testimonium Maturitatis, 1891.
Political Economy and Finance, *Sociology and Statistics.*

Stuchell, William Torrence.....New York
Harvard College, A.B., 1894.
Sociology and Statistics.

Tanner, Edwin Platt.....Paterson, N. J.
Columbia College, A.B., 1897.
American History, *European History*, *Sociology and Statistics.*

Tiebout, Cornelius Henry, Jr.....Brooklyn
Brooklyn Polytechnic Institute, A.B., 1897.
Administrative Law, *Constitutional Law*, *Political Economy and Finance.*

Tuttle, William Ransom.....Burton, O.
Columbia University, A.M., 1897.
Yale University, Ph.D., 1897.
European History, *American History*, *Political Economy*, *and Finance.*

Wait, Benjamin Wofford.....Barnwell, S. C.
Wofford College, A.B., 1895.
Vanderbilt University, A.M., 1897.
Political Economy and Finance, *Sociology and Statistics*, *Political Philosophy.*

Wallace, Samuel Stuart.....New York
Dickinson College, A.B., 1890; A.M., 1893.
Political Economy and Finance, *Sociology and Statistics*, *American History.*

Warner, Charles Henry.....Rosemond, Ill.
Blackburn College, A.B., 1894.
Sociology and Statistics.

Weir, William Nicholas.....Carmel, N. Y.
Sociology and Statistics.

Wenmann, Byrd Wilson.....New York
European History, *American History*, *Political Philosophy*, *Political Economy and Finance.*

Wessell, Arthur Luis.....New York
Political Economy and Finance.

Whitaker, Charles Hurlbut.....Bushkill, Pa.
Princeton University, A.B., 1887.
American History, *European History*, Philosophy.

Whitten, Robert Harvey.....South Bend, Ind.
University of Michigan, B.L., 1896.
Administrative Law, *Constitutional Law*, *Political Economy and Finance.*

Wilcox, Delos Franklin.....New York
University of Michigan, A.B., 1894.
Columbia University, A.M., 1895; Ph.D., 1896.
Comparative Jurisprudence.

Wilson, David Logan.....New York
Sociology and Statistics.

SUMMARY

Students primarily registered under this faculty.....	74
Students from other faculties of the University:	
From the College.....	33
From the School of Law.....	197
From the Schools of Applied Science.....	3
From the School of Philosophy.....	28
From the School of Pure Science.....	1
Total.....	336

SCHOOL OF PHILOSOPHY

The following departments are represented in the Faculty:

ENGLISH
ENGLISH LANGUAGE AND LITERATURE
LITERATURE
RHETORIC
GERMANIC LANGUAGES AND LITERATURES
GREEK LANGUAGE AND LITERATURE
INDO-IRANIAN LANGUAGES
LATIN LANGUAGE AND LITERATURE
MUSIC
PHILOSOPHY AND EDUCATION
PSYCHOLOGY
ROMANCE LANGUAGES AND LITERATURES
SEMITIC LANGUAGES AND RABBINICAL LITERATURE

Officers of the Faculty

NICHOLAS MURRAY BUTLER, Ph.D. ..... *Dean and Ex-Officio Member of the University Council*

EDWARD DELAVAN PERRY, Ph.D. ..... *Secretary and Elected Delegate to the University Council*

The Faculty

SETH LOW, LL.D., *President*

THOMAS RANDOLPH PRICE, M.A., LL.D., *Professor of the English Language and Literature*

HARRY THURSTON PECK, Ph.D., *Professor of the Latin Language and Literature*

NICHOLAS MURRAY BUTLER, Ph.D., *Professor of Philosophy and Education*

WILLIAM HENRY CARPENTER, Ph.D., *Professor of Germanic Philology*

JAMES MCKEEN CATTELL, Ph.D., *Professor of Psychology*

EDWARD DELAVAN PERRY, Ph.D., *Jay Professor of the Greek Language and Literature*

ABRAHAM VALENTINE WILLIAMS JACKSON, Ph.D., *Professor of the Indo-Iranian Languages*

ADOLPHE COHN, LL.B., A.M., *Professor of the Romance Languages and Literatures*

GEORGE EDWARD WOODBERRY, A.B., *Professor of Literature*

BRANDER MATTHEWS, A.M., LL.B., *Professor of Literature*

RICHARD JAMES HORATIO GOTTHEIL, Ph.D., *Professor of Rabbinical Literature and the Semitic Languages*

HENRY ALFRED TODD, Ph.D., *Professor of Romance Philology*

GEORGE RICE CARPENTER, A.B., *Professor of Rhetoric and English Composition*

James Rignall Wheeler, Ph.D., *Professor of Greek*
James Hervey Hyslop, Ph.D., *Professor of Logic and Ethics*
James Chidester Egbert, Jr., Ph.D., *Adjunct Professor of Latin*
Carlo Leonardo Speranza, A.M., B. ès L., *Adjunct Professor of the Romance Languages and Literatures*
Calvin Thomas, A.M., *Professor of the Germanic Languages and Literatures*
Edward Alexander MacDowell, Mus.D., *Professor of Music*

Note.—For details as to other officers of instruction, see departmental statements.

GENERAL STATEMENT

The Faculty of Philosophy has charge of the university courses of instruction and research in philosophy, philology, and letters. Any duly matriculated university student is at liberty to combine courses of study and investigation under this faculty with courses offered by the Faculties of Law, Medicine, Political Science, Pure Science, and Applied Science.

Students are received either as candidates for the degrees of Bachelor of Arts, Master of Arts, or Doctor of Philosophy, or to pursue special or partial courses. Some courses of lectures are open to the public, men and women alike, on payment of an auditor's fee. No auditor will be admitted to any course without the consent of the instructor, previously obtained. Auditors do not have and cannot receive any university recognition whatever.

Students enrolled either in the General, the Union, or the Jewish Theological Seminary, in the City of New York, who may be designated for the privilege by the authorities of those institutions, and accepted by the President of Columbia University, are admitted to the courses offered by the Faculty of Philosophy free of any charge for tuition.

Students enrolled in the Art Schools of the Metropolitan Museum of Art, who may be designated for the privilege by the authorities of those schools, and accepted by the President of Columbia University, are permitted to attend the courses of lectures on archæology and æsthetics free of any charge for tuition.

By the terms of an alliance between Columbia University and Teachers College, duly qualified students of the Teachers College are permitted to enter the courses offered by the Faculty of Philosophy, either as candidates for degrees or as special students.

All of these institutions offer reciprocal privileges to students of Columbia University.

ADMISSION AND ATTENDANCE

Students desiring to pursue their studies under the direction of the Faculty of Philosophy as candidates for a degree, must have completed the curriculum of some college in good standing at least to the close of the Junior year. Certificates of graduation or dismission from institutions of learning in foreign countries are also accepted.

Candidates for the degree of Bachelor of Arts are required to pursue courses of instruction amounting in all to not less than fifteen hours of attendance a

week for one year, and must conform to such requirements regarding a graduation thesis as are established for members in the Senior class in Columbia College. Their selection of studies is not confined to those in this faculty. Students may pursue courses offered by the Faculty of Political Science or the Faculty of Pure Science, or the first-year course in the School of Law or the School of Medicine, and count the same as part of the requirement for the bachelor's degree.

Candidates for the degrees of Master of Arts and Doctor of Philosophy must hold a bachelor's degree from some college in good standing and remain in residence not less than one and three years respectively. They are required to pursue courses of study or research in one major and two minor subjects, but are not held to any fixed number of hours of attendance per week.

Candidates for the degree of Doctor of Philosophy who have been in residence at other universities are given credit for the same.

Students who are not candidates for a degree are admitted to any courses which they are found competent to undertake.

There are no examinations for admission, either as candidates for a degree or as special students. Students are admitted at any time during the year, and may present themselves for examination for a degree whenever the requirements as to residence and an essay or dissertation have been complied with.

For fees see page 17.

COURSES OF STUDY AND RESEARCH

For the courses offered for 1897–98, see departmental statements, as below. For more detailed accounts of the courses and for the tender of 1898–99, application should be made for circular of the School of Philosophy.

Philosophy and Education, page 120
Experimental Psychology, page 122
Greek (including Archæology and Epigraphy), page 81
Latin (including Epigraphy and Roman Archæology), page 89
English, page 71
Literature, page 73
Music, page 107
Germanic Languages, page 78
Romance Languages:
- **French, page 133**
- **Italian, page 137**
- **Spanish, page 137**
- **Provençal, page 137**
- **Portuguese and Rumanian, page 138**
- **Romance Philology, page 138**

Oriental Languages:
- **Semitic Languages, page 110**
- **Indo-Iranian Languages, page 113**

Study of Language, page 114
Courses at the Union Theological Seminary:
New Testament Greek, page 83

REGISTER OF STUDENTS

Following each student's name are printed, in italics, the subjects pursued by him under the Faculty of Philosophy; if the student is enrolled under another faculty as well, the name of that faculty is given in Roman type.

Ackerman, William Alfred.....Ackermanville, Pa.
Lafayette College, A.M., 1897.
Education, *Philosophy*, *Anthropology*.

Anspacher, Louis Kaufman.....New York
College of the City of New York, A.B., 1897.
Philosophy; Political Science.

Appleton, Floyd.....Plainfield, N. J.
Columbia College, A.B., 1893.
Philosophy; Political Science.

Bagster-Collins, Elijah William.....New York
Brown University, A.B., 1897.
Germanic Languages and Literatures, *Indo-Iranian*.

Baldwin, Harold.....Austin, Tex.
Philosophy, *Education*; Political Science.

Bartlett, Frederic Huntington.....Fayetteville, N. Y.
Harvard University, A.B., 1895.
Literature, *Education*.

Batman, Levi Gordon.....Bloomington, Ind.
Indiana University, A.B., 1895.
Philosophy.

Bice, Hiram Horsburgh.....New York
Johns Hopkins University, A.B., 1889.
Latin.

Binder, Rudolph Michael.....Medyes, Hungaria
Harvard University, A.B., 1893.
University of Chicago, B.D., 1897.
Philosophy, *Psychology*.

Birkholz, Joseph Albert.....New York
Philosophy.

Brooks, Frank Hoag.....New York
Columbia College, A.B., 1897.
Greek, *Latin*.

Bruen, Henry Munro.....Belvidere, N. J.
Princeton University, A.B., 1896.
English Language and Literature.

Brydges, Ralph Lionel.....Islip, N. Y.
Columbia University, A.M., 1896.
Anthropology; Political Science.

Campbell, William Aitken.....Clifford, Canada
Toronto University, A.B., 1895 ; A.M., 1896.
Semitic Languages and Literatures.

Carmiencke, Albert Greenleaf.....New York
Music.

Chandler, Frank Wadleigh.....Brooklyn
Brooklyn Polytechnic Institute, A.B., 1894.
Columbia University, A.M., 1896.
Literature, Philosophy, French.

Chase, Lewis Nathaniel.....Riverside, Cal.
Columbia College, A.B., 1895.
Literature, English.

Chollet, Charles.....New York
Harvard University, A.B., 1887.
Romance Languages and Literatures, Indo-Iranian.

Churchill, Marlborough.....New York
Columbia College, A.B., 1877.
Education, English, Literature.

Clark, Victor Seldon.....Minneapolis, Minn.
Minnesota University, B.L., 1890.
Latin, Roman Archæology ; Political Science.

Cleveland, Treadwell, Jr.....New York
Williams College, A.B., 1897.
Philosophy, Anthropology.

Cole, Lawrence Thomas.....Ann Arbor, Mich.
University of Michigan, A.B., 1892 ; A.M., 1896.
General Theological Seminary, B.D., 1896.
Philosophy ; Political Science.

Conant, Roger Lewis.....Brooklyn
Columbia College, A.B., 1895.
Latin, Greek.

Cornaz, Ernest.....Missy, Switzerland
University of Lausanne, Licencie, 1896.
Romance Languages and Literatures, English Language and Literature.

Cummins, Alexander Griswold, Jr.....New York
Swarthmore College, A.B., 1889.
Literature, Philosophy ; Political Science.

Cushman, Earl Livingston.....Middlebury, Vt.
Middlebury College, A.B., 1895.
English, German.

Davidson, Leonard Palmeter.....San Diego, Cal.
Philosophy ; Political Science.

Dickey, Charles Lee.....Protemus, Tenn.
Cumberland University, A.B., 1895.
Philosophy, Greek ; Political Science.

Dinwiddie, Robert Edward Lee.....New York
University of Virginia, A.M., 1893.
Literature.

Dobbs, John Francis.....Minebrook, N. J.
Lafayette College, A.B., 1897.
Philosophy, *Greek ;* Political Science.

Eccles, George Warrington.....Bay Side, N. Y.
Psychology, *Anthropology*, *Philosophy*.

Emhoff, Elmer Ellsworth.....Wilcox, Pa.
University of Wooster. A.B., 1892.
Philosophy ; Political Science.

Erdman, Paul.....Morristown, N. J.
Princeton University, A.B., 1894.
Semitic Languages and Literatures.

Fitz-Gerald, John Driscoll, 2d.....Newark, N. J.
Columbia College, A.B., 1895.
Romance Languages and Literatures, *Latin.*

Flom, George Tobias.....Utica, Wis.
University of Wisconsin, B.L., 1893.
Vanderbilt University, A.M., 1894.
Germanic Languages and Literatures, *English Language and Literature.*

Fowler, Wilson Warren.....Baltimore, Md.
Rutgers College, B.S., 1897.
Education, *Psychology*, *Philosophy*.

Gammack, Arthur James.....West Hartford, Conn.
Trinity College, Toronto, A.M., 1892.
Philosophy.

Gordon, George Andrew.....Amesbury, Mass.
Brown University, A.B., 1895 ; A.M., 1896.
Education, *Philosophy*, *Psychology.*

Grannis, Appleton.....Caldwell, N. J.
Columbia College, A.B., 1893.
Ethics, *Philosophy ;* Political Science.

Gray, Henry David.....Albany, N. Y.
Colgate University, Ph.B., 1897.
Literature, *Philosophy.*

Gray, Louis Herbert.....Princeton, N. J.
Princeton University, A.B., 1896.
Sanskrit and Iranian, *Arabic.*

Greenway, Walter Burton.....Broylesville, Tenn.
Washington College, A.B., 1897.
Philosophy, *Greek ;* Political Science.

Henderson, Arthur Weldon.....Morrisville, Mo.
Cumberland University, A.B., 1897.
Philosophy, Political Science.

Herdman, Hugh Henry, Jr .....Morrisonville, Ill.
Wabash College, A.B., 1896.
Literature, *English.*

Hodges, Archibald Livingston.....Jersey City, N. J.
Harvard University, A.B., 1893 ; A.M., 1897.
Latin.

Hogan, Giles Hastings.....Water Valley, Miss.
Cumberland University, A.B., 1894.
Philosophy ; Political Science.

Holden, Louis Halsey.....Newark, N. J.
Yale University, A.B., 1895.
Columbia University, A.M., 1897.
Semitic Languages and Literatures ; Political Science.

Houston, Henry Eugene.....Paterson, N. J.
Columbia College, A.B., 1895.
Psychology, *Education*, *Physics*.

Humiston, William Henry.....East Orange, N. J.
Lake Forest College, B.S., 1891.
Music.

Johnston, Samuel Carlisle.....Hamilton, N. Y.
Colgate University, A.B., 1884 ; A.M., 1887.
Greek, *Latin*, *Education*.

Jones, Adam Leroy.....Hoopeston, Ill.
Williams College, A.B., 1895.
Philosophy, *Education*, *Literature*.

Jordan, Daniel.....New York
University of France, B. S., 1888.
State Normal College, Albany, Pd.B., 1893.
Romance Languages and Literatures, *Psychology*.

Kaplan, Bernard Michael.....New York
Columbia College, A.B., 1897.
Ethics, *Philosophy*, *Education*.

Keppler, Emil Alexander Charles.....New York
Columbia University, Ph.B., 1895 ; A.M., 1897.
Literature, *English*, *Philosophy*.

Krans, Horatio Sheafe.....New York
Columbia University, A.B., 1894 ; A.M., 1897.
Literature, *French*.

Kuntz, Charles.....New York
Psychology, *Philosophy*, *Anthropology*.

Lay, Wilfrid.....New York
Columbia College, A.B., 1893.
Psychology, *Music*.

Leo, Richard Leopold.....New York
Columbia College, Ph.B., 1895.
Music.

Leslie, Alexander von Wolffersdorff.....New York
Harvard University, A.B., 1894.
Lincoln University, A.M., 1895.
Literature, *English*, *Italian*.

Levine, David.....New York
College of the City of New York, A.B., 1896.
Semitic Languages and Literatures, *Philosophy*, *Education*.

Locke, Jesse Albert.....New York
Columbia College, A.B., 1880.
Literature, *English*.

Lowden, John William.....Pictou, Nova Scotia
Philosophy ; Political Science.

Lyon, John Henry.....Milburn, N. J.
Columbia College, A.B., 1897.
English, Literature, Sanskrit.

McConkey, Henry Alexander.....Peach Bottom, Pa.
Princeton University, A.B., 1890.
Philosophy.

McWhood, Leonard Beecher.....Newark, N. J.
Columbia College, A.B., 1893.
Psychology, Music ; Political Science.

Mandel, Morris.....New York
College of the City of New York, A.B., 1897.
Semitic Languages and Literatures, English.

Martin, Hugh Whitefield.....New York
Music.

Milligan, Lawrence Edwards.....Jacksonville, Ill.
Illinois College, A.B., 1897.
Rhetoric, English, Literature.

Mohr, Charles Adam.....New York
Keystone Normal School, B.E., 1890.
Philosophy.

Moulson, George DeWitt.....Rochester, N. Y.
Amherst College, A.B., 1896.
Literature.

Nordby, Conrad Hjalmar.....New York
College of the City of New York, B.S., 1886.
Germanic Languages and Literatures, Education.

Palmer, Franklin.....New York
Harvard University, A.B., 1886; M.D., 1890.
Music.

Pentz, Julius Wilhelm.....New York
Philosophy.

Perrin, Ernest Noël.....New York
College of the City of New York, A.B., 1879.
Harvard University, A.B., 1882.
Columbia University, LL.B., 1885.
Romance Languages and Literatures, Education.

Popper, William.....Brooklyn
Columbia College, A.B., 1896.
Semitic Languages and Literatures, Anthropology.

Radau, Hugo.....New York
Columbia University, A.M., 1897.
Semitic Languages and Literatures, Indo-Iranian.

Randolph, Corliss Fitz.....New York
Alfred University, A.B., 1888; A.M., 1888.
Latin, Roman Archæology, Greek.

Raymond, Frederic Newton.....Lawrence, Kan.
Kansas State University. A.B., 1896.
Columbia University, A.M., 1897.
Literature, French.

Reed, Albert Granberry.....Paducah, Ky.
Vanderbilt University, A.B., 1895.
Egnlish Language and Literature, *Literature*, *Germanic Languages and Literatures.*

Reed, Robert Franklin.....Northampton, Pa.
Franklin and Marshall College, A.B., 1896.
Philosophy.

Reich, Sigmund.....New York
College of the City of New York, A.B., 1895.
Semitic Languages and Literatures, *English*, *German.*

Remy, Arthur Frank Joseph.....New York
College of the City of New York, A.B., 1890.
Columbia University, A.M., 1897.
Germanic Languages and Literatures, *Sanskrit.*

Rollins, Frank.....New York
Wesleyan University, A.B., 1889.
Education, *Psychology.*

Rubenstein, Charles Aaron.....New York
University of Cincinnati, B.L., 1891.
Philosophy, *Semitic Languages and Literatures.*

Rupp, August.....New York
College of the City of New York, A.B., 1884.
Latin, Roman Archæeology, *Greek.*

Sandt, Jacob Henry.....Stockertown, Pa.
Lafayette College, A.B., 1897.
Education.

Schneider, John Philip.....Cooperstown, N. Y.
Wittenberg College, A.B., 1896.
English Language and Literature, *Literature*, *German.*

Schroeder, Detlef Heinrich.....Council Bluffs, Ia.
Iowa Wesleyan University, A.B., 1895.
Semitic Languages and Literatures; Political Science.

Scoggan, Edward Barker.....College Springs, Ia.
Amity College, A.B., 1896.
University of Illinois, A.M., 1897.
Philosophy, *Greek*, *Latin.*

Sears, Stephen Faunce.....New York
Harvard University. A.B., 1896.
Literature, *English.*

Sinclair, Upton Beall, Jr.....New York
College of the City of New York, A.B., 1897.
Philosophy, *Latin*, *English*, *Literature;* Political Science.

Smith, Gerald Birney.....Middlefield, Mass.
Brown University, A.B., 1891.
Philosophy, *Greek;* Political Science.

Spaulding, Edward Gleason.....Burlington, Vt.
University of Vermont, B.S., 1894.
Columbia University, A.M., 1896.
Philosophy, *Literature.*

Spingarn, Joel Elias.....New York
Columbia College, A.B., 1895.
Literature, Italian.

Stanley, Walter Peck.....South Norwalk, Conn.
Music.

Stephens, John Walter.....Honey Grove, Tex.
Trinity University, A.B., 1893.
Cumberland University, B.D., 1896.
Anthropology.

Stewart, Albert Cross.....Sumner, Wash.
Whitworth College, A.B., 1896.
Philosophy.

Stockwell, Frederick Emerson.....Providence, R. I.
Brown University, A.B., 1890.
Philosophy, Greek ; Political Science.

Stoeckius, Alfred.....New York
Semitic Languages and Literatures, Sanskrit.

Tamblyn, William Ferguson.....Whitby, Ontario
Toronto University, A.B., 1895.
Latin, Greek, Sanskrit.

Taylor, James Paddock.....Hamilton, N. Y.
Colgate University, A.B., 1895.
Education, Anthropology, Philosophy.

Temple, Truman Roswell.....New York
Philosophy, Psychology, Rhetoric, English ; Political Science.

Thorndike, Edward Lee.....Cambridge, Mass.
Wesleyan University, A.B., 1895.
Harvard University, A.B., 1896 ; A.M., 1897.
Psychology, Philosophy ; Pure Science.

Thorne, John Tully.....Brooklyn
Dartmouth College, B.L., 1897.
Latin, Roman Archæology, Education.

Tombo, Rudolf, Jr.....New York
College of the City of New York, B.S., 1895.
Germanic Languages and Literatures, English.

Torossian, Bedros Reuben.....Diarbekir, Turkey
Philosophy, English, Oriental Languages.

Underhill, John Garrett.....Brooklyn
Brooklyn Polytechnic Institute, A.B., 1894.
Columbia University, A.M., 1896.
Literature, Philosophy, French.

Updegraff, Harlan.....Fairfield, Ia.
Cornell College, Ph.B., 1894.
Education ; Political Science.

Vail, Newton Foster.....Geneva, N. Y.
Hobart College, A.B., 1890.
Yale University, A.B., 1892.
Hobart College, A.M., 1897.
Latin, Greek, Archæology.

Walcott, Gregory Dexter ..... Warren, R. I.
Brown University, A.B., 1897.
Philosophy, *Greek;* Political Science.

Washington, William Morrow ..... Newport, Ky.
Centre College of Kentucky, B.S., 1895.
Philosophy, *Psychology*, *Education.*

Webster, William Clarence ..... New York
Albion College, A.B., 1887.
Columbia University, Ph.D., 1897.
Psychology, *Education.*

Wiers, Edgar Swan ..... Cleveland, O.
Adelbert College, A.B., 1895.
Philosophy; Political Science.

Williams, John ..... New York
Trinity College, A.B., 1890; A.M., 1893.
Philosophy, *Anthropology.*

Yohannan, Isaac ..... New York
Columbia College, A.B., 1897.
Semitic Languages and Literatures, *Turkish*, *Indo-Iranian.*

SUMMARY

Students primarily registered under this faculty		115
Students from other faculties of the University:		
From the College		38
From the School of Law		6
From the School of Medicine		2
From the Schools of Applied Science		5
From the School of Political Science		13
From the School of Pure Science		7
Students from Barnard College:		
Seniors	23	
Graduate Students	34	
	—	57
Total		243

SCHOOL OF PURE SCIENCE

The following departments are represented in the Faculty:

ANATOMY
ASTRONOMY
BACTERIOLOGY
BOTANY
CHEMISTRY
GEOLOGY
MATHEMATICS
MECHANICS
MINERALOGY and METALLURGY
PHYSICS
PHYSIOLOGY
ZOÖLOGY

Officers of the Faculty

ROBERT S. WOODWARD, C.E., Ph.D..... *Dean and Ex-Officio Member of the University Council*
WILLIAM HALLOCK, A.B., Ph.D ..... *Secretary*
JOHN K. REES, A.M., E.M., Ph.D., *Elected Delegate to the University Council*

The Faculty

SETH LOW, LL.D., *President*

J. HOWARD VAN AMRINGE, Ph.D., L.H.D., *Professor of Mathematics*
OGDEN N. ROOD, A.M., *Professor of Physics*
CHARLES F. CHANDLER, Ph.D., M.D., LL.D., *Professor of Chemistry*
JOHN K. REES, A.M., E.M., Ph.D., *Professor of Astronomy and Director of the Observatory*
JOHN G. CURTIS, A.M., M.D., *Professor of Physiology*
ALFRED J. MOSES, E.M., Ph.D., *Professor of Mineralogy*
GEORGE S. HUNTINGTON, M.D., *Professor of Anatomy*
HENRY FAIRFIELD OSBORN, Sc.D., *Da Costa Professor of Zoölogy*
EDMUND B. WILSON, Ph.D., *Professor of Invertebrate Zoölogy*
JAMES F. KEMP, A.B., E.M., *Professor of Geology*
WILLIAM HALLOCK, A.B., Ph.D., *Adjunct Professor of Physics*
MICHAEL I. PUPIN, Ph.D., *Adjunct Professor of Mechanics*
T. MITCHELL PRUDDEN, M.D., *Professor of Bacteriology*
ROBERT S. WOODWARD, C.E., Ph.D., *Professor of Mechanics*
THOMAS S. FISKE, A.M., Ph.D., *Professor of Mathematics*
HAROLD JACOBY, Ph.D., *Adjunct Professor of Astronomy*
FRANK N. COLE, Ph.D., *Professor of Mathematics*
FREDERIC S. LEE, Ph.D., *Adjunct Professor and Demonstrator of Physiology*
LUCIEN M. UNDERWOOD, Ph.D., *Professor of Botany*

NOTE.—For details as to other officers of instruction, see departmental statements.

GENERAL STATEMENT

The Faculty of Pure Science has charge of the university courses of instruction and research in all branches of pure science, and especially the supervision of candidates for the degrees of Master of Arts and Doctor of Philosophy in pure science. Students under other university faculties are also at liberty to pursue courses of study and investigation under this faculty.

Candidates for the higher degrees taking major subjects in pure science will be regarded as under the special jurisdiction of this faculty, and must apply to the Dean for registration before entering upon their work. The same registration requirement must also be complied with by students who desire to pursue special subjects under this faculty.

In the faculty are represented all the departments of the University which give instruction in Pure Science.

Graduate students, candidates for the degrees of A.M. or Ph.D., are subject:

1st. To the general regulations of the University Council. (See p. 145.)

2d. To the special regulations of this faculty.

Special Regulations of the Faculty of Pure Science

The degree of Doctor of Philosophy is awarded on the basis of a thorough training in the methods of advanced work and investigation in some branch of science. The following statements are offered for the guidance of students. In the case of students of especial ability or exceptional previous training, the faculty may modify its usual regulations.

The student is expected to gain a sound general knowledge of the two minor subjects of his choice. In the major subject a much more thorough and special knowledge is required, particular importance being attached to training in research. In order to avoid undue specialization, no two subjects can be chosen from the same department without the consent of the faculty.

One year's study in residence in the University is required for the degree of Master of Arts, and three years' study for the degree of Doctor of Philosophy, at least one year of which shall be in residence. Candidates for either of these degrees are expected to devote at least one-half their time throughout their course of study to the major subject. In the case of laboratory courses this implies two days a week, or its equivalent, as determined by each department. Each minor subject is intended to occupy approximately one-fourth of the time during one year for the degree of Master of Arts, and during one or two years, according to the nature of the subject and the previous training of the candidate, for the degree of Doctor of Philosophy. It is expected that the third year of study, and in certain cases both the second and the third years, will be wholly devoted to the major subject and to investigation for the dissertation.

The approval of the subject of the essay required for the degree of Master of Arts, or the subject of the dissertation required for the degree of Doctor of Philosophy, as well as the essay or dissertation itself, rests with the instructor in charge of the candidate's major subject. It is desirable that these studies should be related, and, when practicable, that they should be treated respectively as preliminary and completed investigations. Great importance is attached to the character of the final dissertation. While it must depend for

acceptance chiefly on the subject-matter, it should show good literary workmanship, especially by directness and clearness of statement. It should demonstrate the author's capacity to do original scientific work and to render an intelligible account thereof. It should evince a familiarity with the literature of the subject and with the latest methods of research applicable to it. The treatment should be as concise as the nature of the work permits. Every dissertation should be preceded by a clear introductory statement setting forth the nature and the scope of the research, and be followed by a résumé of the results and the conclusions obtained. It should also be accompanied by a table of contents and by a list of the authorities consulted in its preparation.

The dissertations are to be submitted by the third week of March. They are to be distributed to the faculty before the final examination. The essay for the degree of Master of Arts must be submitted on or before May 15th.

Examinations

Applications to be examined for the degree of Master of Arts or Doctor of Philosophy must be made on or before April 1st of the academic year in which the examination is desired. The examination may be oral, or at least in part, and in the case of candidates for the degree of Doctor of Philosophy, the dissertation must be publicly defended in the presence of the faculty or of so many of the members as may desire to attend. The instructors in charge of the candidate's major and minor subjects will conduct the examination.

At the time of the final examination for the degree of Doctor of Philosophy candidates will be expected to read scientific works in French and German at sight.

Special Students

Students who are not candidates for a degree may be permitted to pursue such courses from among those offered by this faculty as they may be found qualified to enter upon. Each applicant must demonstrate his preparation for, and his ability to pursue, the course or courses selected, and of his qualifications the heads of the departments in which he proposes to study shall be the judges. In general these special courses are open only to advanced students.

COURSES OF STUDY

For the courses offered for 1897–98 see departmental statements given below. For more detailed accounts of the courses and for the tender of 1898–99 application should be made for announcement of the School of Pure Science.

Mathematics, page 93
Mechanics, page 96
Astronomy, page 42
Physics, page 126
Chemistry, page 47
Mineralogy, page 101
Geology, page 76
Zoölogy, page 140
Botany, page 43
Physiology, page 129
Anatomy, page 35
Bacteriology, page 118

REGISTER OF STUDENTS

Following each student's name are printed in italics the subjects pursued by him under the Faculty of Pure Science; if the student is enrolled under another faculty as well, the name of that faculty is given in Roman type.

Akers, William Anderson.....Lake City, Colo.
Chemistry, *Geology;* Applied Science.

Anderson, Abram Ellsworth.....Brooklyn
Zoölogy.

Anthony, Alfred.....New York
Chemistry.

Beebe, Charles William.....East Orange, N. J.
Zoölogy.

Betts, Anson Gardner.....Lansingburg, N. Y.
Yale Univerity, Ph.B., 1897.
Chemistry, *Mechanics.*

Brown, Barnum.....Carbondale, Kan.
Zoölogy.

Davis, Bergen.....New York
Rutgers College, B.S., 1896.
Physics.

Duncan, Robert Kennedy.....New York
Toronto University, A.B., 1892.
Chemistry, *Geology;* Philosophy.

Edwards, Charles William.....Durham, N. C.
Trinity College, B.S., 1894.
Tulane University, A.M., 1896.
Mechanics.

Engle, Wilbur Dwight.....Denver, Colo.
Albion College, A.B., 1893; A.M., 1894.
Chemistry, *Physics*, *Mineralogy.*

Eyer, George Alexander.....New York
Chemistry, *Physics*, *Mineralogy.*

Gibson, James Lambert.....Vernal, Utah
University of Utah, B.S., 1895.
Mechanics, *Mathematics*, *Physics;* Philosophy.

Goodell, George Arthur.....Deerfield, Mass.
Amherst College, A.B., 1894.
Chemistry, *Mineralogy*, *Physics.*

Gotthelf, August Henry.....Hastings-on-Hudson, N. Y.
Columbia University, B.S., 1897.
Chemistry, *Physics*.

Griffin, Bradney Beverly.....New York
College of the City of New York, B.S., 1894.
Zoölogy.

Haines, Edwin Irvine.....New Rochelle, N. Y.
Chemistry, *Physics*, *Mineralogy*.

Harrington, Nathan Russel.....Cleveland, O.
Williams College, A.B., 1893; A.M., 1895.
Zoölogy, *Physiology*, *Anatomy*.

Hazen, Tracy Elliot.....Burlington, Vt.
University of Vermont, A.B., 1897.
Botany, *Zoölogy*, *Geology*.

Hendersen, Arthur Merritt.....Nyack, N. Y.
Mineralogy, *Geology*.

Hill, Benjamin Felix.....Austin, Tex.
University of Texas, B.S., 1896; M.S., 1897.
Geology; Applied Science.

Holder, Oscar Howe.....New York
Harvard University, A.B., 1891; A.M., 1892.
Zoölogy.

Holmes, Tracy Harris.....Chicago, Ill.
Beloit College, Ph.B., 1893
Zoölogy, *Physiology*, *Bacteriology*.

Howe, Marshall Avery.....Newfane, Vt.
University of Vermont, Ph.B., 1890.
Botany, *Zoölogy*, *Geology*.

Hyde, Henry St. John.....New York
Columbia University Ph.B., 1896.
Chemistry, *Physics*.

Irving, John Duer.....New York
Columbia College, A.B., 1896.
Geology, *Chemistry*, *Mineralogy*; Applied Science.

James, Joseph Hidy.....Washington C. H., O.
Buchtel College, B.S., 1894.
Chemistry, *Physics*; Philosophy.

Kasner, Edward.....New York
College of the City of New York, B.S., 1896.
Mathematics, *Mechanics*; Philosophy.

Kretz, Walter Coluzzi.....New York
Columbia University, A.B., 1896; A.M., 1897.
Astronomy, *Mathematics*, *Mechanics*; Applied Science.

Lawrence, Amos Edward, Jr.....Boston, Mass.
Physics, *Chemistry*.

Lawrence, George Alfred.....New York
Leland Stanford University, A.B., 1893.
Columbia University, M.D., 1895; A.M., 1896.
Zoölogy, *Bacteriology*.

Libaire, Edward William.....New York
Mechanics.

Lippett, William Millard.....Lake City, Colo.
Chemistry, *Geology*, *Mineralogy:* Applied Science.

Lloyd, Francis Ernest.....New York
Princeton University, A.B., 1891; A.M., 1895.
Botany, *Zoölogy*, *Geology.*

Loos, Herman Andreas.....New York
College of the City of New York, B.S., 1895.
Chemistry, *Physics.*

Mathews, Albert Prescott.....New York
Mass. Institute of Technology, B.S., 1892.
Zoölogy.

Mathews, John Alexander.....Brooklyn
Washington and Jefferson College, B.S., 1893; M.S., 1896.
Columbia University, A.M., 1895.
Chemistry: Physiology.

Milke, Edward Everett, Jr.....Jersey City, N. J.
Chemistry, *Physics.*

Moulsdale, Gilbert Charles.....Rahway, N. J.
Ill. Western University, Ph.B., 1893.
Drew Theological Seminary, B.D., 1894.
Ill. Western University, Ph.D., 1897.
Botany, *Zoölogy.*

Paulmier, Frederick Clark.....Madison, N. J.
Princeton College, B.S., 1894; M.S., 1896.
Zoölogy, *Botany*, *Physiology:* Philosophy.

Peabody, James Edward.....New York
Zoölogy.

Pope, Frederick John.....Elginburg, Ontario, Canada
Queens University, A.M., 1891.
Chemistry, *Geology*, *Mineralogy.*

Rich, Jacob Monroe.....New York
Columbia University, E.M., 1883; C.E., 1884; M.D., 1894.
Zoölogy.

Roller, Henry Clay.....Cranford, N. J.
Chemistry.

Scherr, Emilius William, Jr.....New York
College of the City of New York, A.B., 1896.
Chemistry, *Physics*, *Mineralogy.*

Schlesinger, Frank.....New York
College of the City of New York, B.S., 1890.
Columbia University, A.M., 1897.
Astronomy, *Mathematics*, *Mechanics.*

Smith, Carl Edward.....New York
University of Michigan, Ph.B.
Chemistry.

Soper, George Albert.....New York
Rensselaer Polytechnic Institute, B.S., 1895.
Chemistry, *Bacteriology.*

Statler, John Haldeman.....New York
Buffalo University, M.D., 1894.
Mineralogy, *Geology*.

Sumner, Francis Bertody.....New York
University of Minnesota, B.S., 1894.
Zoölogy, *Physiology*; Philosophy.

Wallace, Leonard Wyman.....New York
Zoölogy.

Walters, Leon Laizer.....Salt Lake City, Utah
University of Utah, B.S., 1897.
Chemistry, *Physics*.

White, Edward Williams.....Loretto, Ky.
Georgetown College, Ky., B.S., 1884.
Mathematics, *Astronomy*, *Mechanics*.

Wooten, Elmer Ottis.....Jamestown, O.
Earlham College, B.S., 1889; A.M., 1896.
Botany, *Geology*, *Physics*.

Yerzley, William Alred.....Ithaca, N. Y.
Cornell University, Mech.E., 1892.
N. Y. State Normal College, B.Pd., 1895.
Geology, *Mineralogy*, *Chemistry*.

Young, Robert Thompson.....Philadelphia, Pa.
University of Pennsylvania, B.S., 1896.
Zoölogy.

SUMMARY

Students registered primarily under this faculty.....	52
Students from other faculties of the University:	
From the School of Medicine.....	17
From the Schools of Applied Science.....	22
From the School of Political Science.....	2
From the School of Philosophy.....	2
Students from Barnard College	10
Total number of students receiving instruction in graduate work.....	105

Publications of the University

COLUMBIA UNIVERSITY PRESS

The Columbia University Press was organized with the approval of the Trustees of Columbia University, and incorporated June 8, 1893, for the purpose of promoting and encouraging the publication of literary works embodying the results of original research and investigation. The Press is a private corporation related directly to Columbia University by the provision that its Trustees must always be officers of the University and that the President of Columbia University shall be the President of the Columbia University Press.

Publications

Classical Studies in Honor of Henry Drisler.

Science of Statistics. Part I. Statistics and Sociology. By Richmond Mayo-Smith, Ph.D.

The Principles of Sociology. By Franklin Henry Giddings, A.M.

Municipal Home Rule. A Study in Administration. By Frank J. Goodnow, A.M., LL.B.

Municipal Problems. By Frank J. Goodnow, A.M., LL.B.

Memoirs of the late Frederick A. P. Barnard, D.D., LL.D., L.H.D., Tenth President of Columbia College in the City of New York. By John Fulton.

Essays in Taxation. By Edwin R. A. Seligman, Ph.D.

An Atlas of Nerve-Cells. By M. Allen Starr, M.D., Ph.D., with the co-operation of O. S. Strong, Ph.D., and Edward Leaming, M.D.

Battle of Harlem Heights. By Henry P. Johnston, A.M.

In Preparation

Celestial Mechanics. Being Lectures Delivered at Columbia University in the Academic Years 1893–94 and 1894–95. By George W. Hill, LL.D.

Cases from the Roman Law. Obligations *ex contractu* and *quasi ex contractu*. Selected and translated by Munroe Smith, J.U.D.

Publishing Agents, The Macmillan Company, 66 Fifth Avenue, New York.

UNIVERSITY BULLETIN

The University Bulletin is issued by the Columbia University Press, with the approval of the Trustees of the University. It is addressed to the Alumni, officers, and friends of the University, and its purpose is to publish articles of interest on topics that concern the University as a whole, to furnish pertinent information with regard to the University and its separate schools, and to give a summary of important University legislation. The Bulletin will appear three times during the academic year, and, until further notice, will be sent free of

charge to such Alumni of the University as may signify their desire to receive it. Numbers I–XIV will be sent, postpaid, by the Macmillan Company, 66 Fifth Avenue, New York City, on receipt of two dollars ; single numbers will be supplied at twenty cents each. Since its foundation, in 1890, the Bulletin has contained a large amount of interesting and valuable matter relating to the University in its period of growth and reconstruction, and a complete set of its numbers is virtually indispensable to Alumni who preserve important publications bearing on the history of the College and the University.

Editorial Committee

From the College, George R. Carpenter (Chairman).
From the Faculty of Applied Science, Frederick R. Hutton.
From the Faculty of Law, George W. Kirchwey.
From the Faculty of Medicine, M. Allen Starr.
From the Faculty of Philosophy, Nicholas Murray Butler.
From the Faculty of Political Science, John B. Moore.
From the Faculty of Pure Science, Henry F. Osborn.
From the University Press, John B. Pine.

All communications relating to the Bulletin should be addressed to the Editorial Committee, University Bulletin, Columbia University, New York City.

SERIAL STUDIES AND CONTRIBUTIONS ISSUED FROM THE UNIVERSITY

Studies in History, Economics, and Public Law.
Studies from the Analytical and Assay Laboratories.
Contributions from the Electrical Engineering Department.
Contributions from the Herbarium of Columbia University.
Contributions from the Mineralogical Department of Columbia University.
Contributions from the Geological Department of Columbia University.
Contributions from the Observatory of Columbia University.
Contributions to Philosophy, Psychology, and Education.
Biological Contributions from Columbia University : Zöology.
Studies from the Department of Pathology, College of Physicians and Surgeons, Columbia University.
Memoirs of the Department of Botany of Columbia University.

The following journals are issued under the direction of members of the faculties of Columbia University or in co-operation with members of other colleges.

The School of Mines Quarterly.	
The Political Science Quarterly.	
Bulletin of the Torrey Botanical Club.	
Bulletin of the New York Mathematical Society.	
The Educational Review.	(In co-operation.)
The Modern Language Notes.	" "
The American Journal of Archæology.	" "
The Psychological Review.	" "
Science.	" "
The American Historical Review.	" "

Degrees Conferred during 1896-1897

Bachelor of Arts

COLUMBIA COLLEGE

Woodward Babcock
Rogers Hammond Bacon
William Fenwick Beekman
Phillip Bissell
Theodore Lawrence Bogert
Arthur Bookman
Philip Ernest Brodt
Frank Hoag Brooks
William Joseph Clarke
Frederick Hassard Cluff
David Cohn
Maurice Cohn
Edward Hamilton Daly
William Theobald Dempsey
Francis Harold Dike
Walter Strong Edwards
Francis Bertram Elgas
Charles Henry Ellard
Henry Harkness Flagler
William Henry Fry
Seymour Keyes Fuller
Benjamin Thorn Gilbert
Arthur Benedict Griffin
William Boone Gunton
Edgar Arnold Hellman
Walter Leon Hess
Charles Knap Hitchcock, Jr.
Edward Thomas Johnston
Bernard Michael Kaplan
Jacob Lester Lewine
Stephen Lindenfelser
John Henry Lyon
Samuel Wilkinson Maguire
Arthur Lockett Marvin
Edward Gibbs Merrill
Nathan Orcutt Petty
John Hill Prentice
Reginald William Grant Pressprich
Albert William Putnam
Franklin Edwin Reese
Charles Chapin Sargent, Jr.
Henry Hathorn Sawyer
George Washington Senftner
William Seward Shanahan
Robert Willis Shearman
Paul Shimmon
Oliver Smith
Erastus Burrows Soper, Jr.
Eugene Edward Spiegelberg
Arthur Barnett Spingarn
Morris Lincoln Strauss
Edwin Platt Tanner
Faneuil Suydam Weisse
George Wilson Wharton
Charles Frederick Wheaton
Isaac Yohannan
Alexander Henry William Zerban

[57]

BARNARD COLLEGE

Agnes Baldwin
Adelaide Wells Brown
Edith Phoebe Bucknam
Mary Bergmann Dobbs
Florence Anderson Dowden
Louise Brisbin Dunn
Estelle Elkus
Grace Lovina Fenton
Alice Medora Ferry
Nellie Priscilla Fletcher
Cordelia Alma Hall
A. Junge
Anna Mary Locke
Myra Emilie Matthews
Edith Rice Sackett
Louise Shaw
Aline Croquet Stratford
Anne Porter Sumner
Lillian Mary Uppercu
Adaline Caswell Wheelock
Maude Wilcox

[21]

Bachelor of Laws

Henry S. Acken
William Boss Arnold
Lawrence Atterbury, A.B.
Grosvenor Hyde Backus, A.B.
Henry Burr Barnes, Jr., A.B.
George Raimes Beach
Alfred Wreaks Booraem
Emanuel Siegfried Cahn, B.S.
George Bowen Case, A.B.
Solomon A. Cohn, A.B.
Bernard M. Cone, A.M.
Alexander Mitchell Crane, A.B.
Lee Sumner Day
Ewing Leo Deputy
Archibald Douglas
Frederick Dwight, A.B.
Jesse W. Ehrich, A.B.
Robert W. B. Elliott, A.M.
John Ewen, A.B.
Moses Feltenstein
Mortimer Kennedy Flagg
David Joseph Fox, B.S.
Clarence Randolph Freeman, A.B.
Albert Fullerton, A.B.
Charles Monteith Gilpin, A.B.
Meredith Hare, A.B.
Montgomery Hare, A.B.
Harry Mason Hewitt
William Henry Hirsh, A.M.
Edwin O. Holter, A.B.
James C. Howell, A.M.
Robert Hamilton Hutchins, A.M.
Maurice Samuel Hyman, A.B.
Ralph Henry Johnson, A.B.
James T. Kilbreth, Jr., A.B.
Maulsby Kimball, A.B.
Arthur Kline Kuhn, A.M.
Edward Lazansky, A.B.
Walter Henry Liebmann, A.B.
Gerald Arthur Lowe
Charles Eddy McCarthy
William Townsend McCoun, Jr.
Frank Heath Mason
William Thomas Mason, A.M.
Arthur Mayer
Samuel M. Michel
Walter Jefferson Moore, A.B.
Adam Gordon Norrie, A.B.
Benjamin G. Paskusz, A.M.
Isidor Pendas, Jr.
Henry Berry Pogson, A.B.
Frank Lyon Polk, A.B.
Edward Anson Prentice
Arthur M. Price
John Gordon Quigley, A.B.
Charles Conway Reiley
William Delamater Riter
Paul Brown Scarff, A.B.
Henry Schoenherr, Jr.
Walter Stanley Schutz, A.B.
Edward Augustus Selfridge, Jr., Ph.B.
Frederic White Shepard, A.B.
Henry Steinert, Jr.
Samuel Sturtz
Laurence Arnold Tanzer, A.B.
Stephen Fraser Thayer, A.B.
Nathaniel Compton Toms
Edward Le Clerc Vogt, Jr.
Richmond Weed, A.B.
Abraham Wielar
James Davies Williams, A.B.
Samuel Lee Wolff, A.M.

[72]

Doctor of Medicine

Isidoro Pablo Agostini
Raoul Arthur Amador
Thomas William Barrett
Charles Sweetser Benson
Frederick Leslie Benton, B.S.
Louis Albert Sayre Bodine
Abram Caspe, A.B., B.S.
Albert King Chipp
Henry Maclean Crawford
Edward Otis Cummings
Pedro de Obarrio
Joseph Smith Dodd
Jos ph Anthony Frasier
William Francis Fuchs

Charles Albert Greenleaf
William Leo Hetherington
William Lawrence Kantor
Sumner Butler Banks Kingsley
Theodore Morse Koupal
Edward Genung Nugent, A.B.
Charles Ray Otis
Frank Elmer Pagett
Edwin Obediah Palmer
Jonathan Manning Roberts
Peter Schaeffler, Jr.
Raymond Wilbur Shattuck
Charles Daniel Steenken, A.B.
Walter Timme, B.S.
Leo Tobias, B.S.
Adolph Urban, B.S.
Ignacio Vado, Jr., A.B.
Frank M. Van Orden, A.B.
Henry Palmerston Vaughan, A.B.
Alfred Cole Wallin
Lyman Hall Wheeler
Elmer George Wherry, A.B.
Henry Draper White
William Edwin Williams
Daniel Woodbury Wynkoop
John Louis Zabala, B.S.

[40]

Engineer of Mines

Alexander Morrison Brown
Josiah Huntoon Clark
William Stewart Davidson
Louis Victor Emanuel
Charles Herman Fulton
Newton Booth Knox
John Campbell Maben, Jr.

[7]

Civil Engineer

David Elder Baxter
Frederick Coykendall
Alexander Simpson Farmer
Abner Winthrop Gill
John Wesley Goodridge
John Henry Madden
Ignatius O'Reardon
Seymour Perkins
Herman Philip Ralph
Charles Edward Rogers
John Huntting Sayres
Walter William Schlecht
Isaac I. Stander
Rowland Gilbert Tibbals
Lazarus White

[15]

Electrical Engineer

Ernest Kempton Adams, Ph.B.
Walter Clymer Barnes
Putnam Asbury Bates
John Jacob Bellman
Reed Raymond Bishop
Emil Christian Boerner, Jr.
Harris Sutton Burroughs
Henri George Francis James Chatain
Charles Martin Clarke
Clarence Lyman Collins, 2d, Ph.B.
Stewart Hooker Crampton
Dexter Newell Force, Jr.
George Frederick Haldy, B.S.
Leo Walter Hildburgh
Frederick Montgomery Holbrook
James Barnes Humphreys
Richard Koch
Max Loewenthal
John Malcolm McLean
Charles William MacMullen
George Willard Magalhaes
Leo Raphael Manheims
Herman Alfred Prosser
George Washington Regan
Joseph Suydam Stout, Jr., A.B.
Christopher Van Deventer
William Van Bergen Van Dyck, B.S.

[27]

Bachelor of Science

(Course in Analytical and Applied Chemistry)

August Henry Gotthelf
Emil Justus Riederer
Charles Adolph Waldenberger

[3]

Bachelor of Science

(Course in Architecture)

George Abraham Boehm
Herbert Wheaton Congdon
Henry Herz
Edwin Kaufmann
William George Kilian
James Bruce McClelland
George Washington Rappold
Oscar Bloodgood Smith, Jr.
Alfred Samuel Guido Taylor, A.B.

[9]

Bachelor of Philosophy

(Course in Analytical and Applied Chemistry)

Henry St. John Hyde

[1]

Master of Arts

Bernard Alexander, A.B.
Helen Culbertson Annan, A.B.
Edward Atkinson Bayles, A.B.
Ralph Lionel Brydges
Louisa Sewall Cheever, A.B.
Elsie Worthington Clews, A.B.
David Cohn, A.B.
Maurice Cohn, A.B.
Thomas Coleman, A.B.
Frederick Coykendall, A.B.
John Howard Dynes, A.B.
Oscar Week Ehrhorn, A.B.
Abram Howry Espenshade, A.B.
Carl Hitchcock Fowler, A.B.
David Joseph Fox, B.S.
James Joseph Franc, Ph.B.
Carrie Hammerslough, A.B.
Daniel W. Harrington, A.B., M.D.
William Henry Hays, A.B.
Louis Halsey Holden, A.B.
Henry Budd Howell, A.B.
Ernest Valentine Hubbard, A.B.
Gardner Kirk Hudson, A.B.
Edith Josephine Hulbert, A.B.
Emil Alexander Charles Keppler, Ph.B.
Alice Mapelsden Keys, A.B.
William Herbert King, B.S.
Herbert Allan Knox, A.B.
Horatio Sheafe Krans, A.B.
Walter Coluzzi Kretz, A.B.
Alfred Louis Kroeber, A.B.
James Anderson Laurie, Jr., A.B.
James Thomas Aloysius Lee, B.S.
Leffert Lefferts, A.B.
Irving Lehman, A.B.
Frederick Montgomery Livingston, A.B.
Alexander Rice McKim, B.S.
Mary Dorsey McMurtrie, A.B.
Charles Edward Merriam, Jr., A.B.
James Mitchell, Ph.B.
William Arthur Dunlap Moore, A.B.
Leonard Jerome Obermeier, A.B.
Mabel Parsons, A.B.
Charles Paul Ernest Peugnet, C.E.

Warren Waverly Phelan, A.B.
William Popper, A.B.
Hugo Radau, Testimonium Maturitatis, S.T.D.
Frederick Newton Raymond, A.B.
Arthur Frank Joseph Remy, A.B.
Frank Schlesinger, B.S.
Charles Herbert Scholey, A.B.
Samuel Swayze Seward, Jr., A.B.
Jessie Frances Smith, A.B.
Joseph Suydam Stout, Jr., A.B.
George Cornell Tarler, B.S.
Joseph Russell Taylor, A.B.
William Ramson Tuttle, A.B.
Oscar Wagner, B.S.
Helen Isabel Whiton, A.B.
Chester James Wilcomb, A.B.
Clara Louise Ziegler, A.B.
Christian Charles Herman Zillman, B.S.

[62]

Doctor of Philosophy

Arthur Beatty, A.B.
Ludwig Bernstein, Testimonium Maturitatis, A.M.
Charles Ernest Chadsey, A.M.
Harry Alonzo Cushing, A.M.
Charles Franklin Emerick, A.B., Ph.M., M.S.
Henry Crosby Emery, A.M.
Ernst Freund, J.U.D.
Milo Roy Maltbie, Ph.M.
Frank Henry Sparks Noble, A.M., LL.B.
Albert Schneider, M.D., M.S.
Henry Clapp Sherman, A.M.
Francis Raymond Stark, A.M., LL.B.
Frank Leo Tufts, A.M.
Ansel Augustus Tyler, A.M.
Walter Shepard Ufford, A.M.
William Clarence Webster, A.B.

[16]

Doctor of Laws

Rt. Rev. Henry Yates Satterlee, S.T.D.,
Bishop of Washington

[1]

Fellows and Scholars

University Fellows

William Maxwell Burke,
Oberlin College, A.B., 1896 ; A.M., 1897. Subject, Political Economy

Alexander James Campbell,
Yale University, Ph.B., 1893. " Mining

Victor Seldon Clark,
University of Minnesota, B.L., 1890. " Latin

John Howard Dynes,
Adelbert College, A.B., 1891.
Harvard University, 1895–96.
Columbia University, A.M., 1897. " Sociology

John Archibald Fairlie,
Harvard College, A.B., 1895 ; A.M., 1896. " Administration

John Driscoll Fitz-Gerald, II,
Columbia College, A.B., 1895. " Romance Languages

George Tobias Flom,
University of Wisconsin, B.L., 1893.
Vanderbilt University, A.M., 1894. " German

Arthur Hillyer Ford, University of Wisconsin, B.S., 1895; E.E., 1896.	Subject,	Electrical Engineering
Louis Herbert Gray, Princeton College, A.B., 1896.	"	Indo-Iranian Languages
Nathan Russell Harrington, Williams College, A.B., 1893; A.M., 1895. Columbia University, Assistant in Zoölogy, 1896–97.	"	Zoölogy
Anselm Vinet Hiester, Lebanon Valley College, B.S., 1887. Franklin and Marshall College, A.B., 1889.	"	Sociology
Marshall Avery Howe, University of Vermont, Ph.B., 1890. University of California, Instructor in Botany, 1891-96. Columbia University, University Scholar in Botany, 1896–97.	"	Botany
John Duer Irving, Columbia College, A.B., 1896. Columbia University, 1896–97.	"	Geology
Allen Johnson, Amherst College, A.B., 1892; A.M., 1895. University of Leipsig, 1895–97	"	European History
Adam Leroy Jones, Williams College, A.B., 1895.	"	Philosophy
Edward Kasner, College of the City of New York, B.S., 1896. Columbia University, 1896–97.	"	Mathematics
Alexander von Wolffersdorff Leslie, Harvard College, A.B., 1894. Lincoln University, A.M., 1895.	"	Literature
Leonard Beecher McWhood, Columbia College, A.B., 1893. Columbia University, University Fellow in Psychology, 1896–97.	"	Psychology
John Alexander Mathews, Washington and Jefferson College, B.S., 1893; M.S., 1896. Columbia University, A.M., 1895; Assistant in Assaying, 1896–97.	"	Chemistry
Charles Edward Merriam, Jr., Lenox College, A.B., 1893. Iowa State University, A.B., 1895.	"	Political Philosophy
William August Schaper, University of Wisconsin, B.L., 1895. Columbia University, University Scholar in Sociology, 1896–97.	"	Sociology

Frank Schlesinger,
College of the City of New York, B.S., 1890.
Columbia University, A.M., 1897. Subject, Astronomy

Clement Moore Lacey Sites,
Ohio Wesleyan University, A.B., 1887; A.M., 1890.
National University Law School, LL.B., 1890.
Columbia University, University Scholar in Political Science, 1896–97. " Constitutional Law

Edward Lee Thorndike,
Wesleyan University, A.B., 1895.
Harvard College, A.B., 1896.
Harvard University, A.M., 1897. " Psychology

Robert Harvey Whitten,
University of Michigan, B.L., 1896.
University of Chicago, 1896–97. " Administration

Barnard Fellow

HEINRICH RIES, Ph.D.

Henry Drisler Fellow

WILLIAM THOMAS FERGUSON TAMBLYN, A.B.

Alumni Association Fellows

(College of Physicians and Surgeons)

JOSEPH A. BLAKE, M.D.
RICHARD H. CUNNINGHAM, M.D.
CHARLES NORRIS, M.D.

John Tyndall Fellow

McKim Fellow

HARRY ALLAN JACOBS, Ph.B.

Class of '70 Fellow

LEWIS BUFFET CARLL, A.M.

President's University Scholars

Corliss Fitz Randolph,
Alfred University, A.B., 1888.
Columbia University, 1896–97. Subject, Latin

James Paddock Taylor,
Colgate University, A.B., 1895.
Harvard University, 1896–97. " Education

Elmer Ottis Wooton,
Earlham College, B.S., 1889.
Columbia University, 1896–97. " Botany

University Scholars

Roscoe Lewis Ashley,		
University of Rochester, A.B., 1894.	Subject,	Economics
George Sheldon Bowman,		
Roanoke College, A.B., 1894.	"	Jurisprudence
Frank Hoag Brooks,		
Columbia College, A.B., 1897.	"	Greek
Barnum Brown,		
Kansas State University, 1897.	"	Zoölogy
Ernest Cornaz,		
Neuchâtel College, Switzerland, A.B., 1889.		
University of Lausanne, Licencié ès lettres modernes, 1896.	"	Romance Languages
William Bernard Cutright,		
University of West Virginia, A.B., 1895.	"	Economics
Wilber Dwight Engle,		
Albion College, A.B., 1893 ; A.M., 1894.	"	Chemistry
Tracy Elliot Hazen,		
University of Vermont, A.B., magna cum laude, 1897.	"	Botany
Hugh Henry Herdman, Jr.,		
Wabash College, A.B., 1896.	"	Literature
Benjamin Felix Hill,		
University of Texas, B.S., 1896 ; M.S., 1897.	"	Geology
Tracy Harris Holmes,		
Beloit College, Ph.B., 1893.	"	Zoölogy
Samuel Carlisle Johnston,		
Colgate University, A.B., 1884 ; A.M., 1887.		
Columbia University, 1896–97.	"	Greek
Walter Coluzzi Kretz,		
Columbia College, A.B., 1896.		
Columbia University, A.M., 1897.	"	Astronomy
Charles Kuntz,		
University of Vienna, 1891–92.		
University of Zurich, 1892–93.		
Columbia University, 1896–97.	"	Psychology
John Henry Lyon,		
Columbia College, A.B., 1897.	"	English
Roswell Cheney McCrea,		
Haverford College, A.B., 1897.	"	Political Science
John Randolph Neal,		
University of Tennessee, A.B., 1893.		
Vanderbilt University, A.M., 1895 ; LL.B., 1896.		
Columbia University, 1896–97.	"	Political Science

Francis Reid North,
Wesleyan University, A.B., 1897. Subject, History
William Popper,
Columbia College, A.B., 1896; Columbia
University, A.M., 1897. " Semitic Languages
Frederic Newton Raymond.
University of Kansas, A.B., 1896.
Columbia University, A.M., 1897. " Literature
Albert Granberry Reed,
Vanderbilt University, A.B., 1895.
Yale University, 1896–97. " English
Arthur Frank Joseph Remy,
College of the City of New York, A.B., 1890.
Columbia University, A.M., 1897. " Comparative Philology
Edward Barker Scoggan,
Amity College, A.B., 1896.
University of Illinois, A.M., 1897. " Philosophy
Francis Bertody Sumner,
University of Minnesota, B.S., 1894.
Columbia University, 1896–97. " Zoölogy
Edwin Platt Tanner,
Columbia College, A.B., 1897. " History
Rudolf Tombo, Jr.,
College of the City of New York, B.S., 1895. " German
William Morrow Washington,
Centre College, B.S., 1895.
Columbia University, 1896–97. " Philosophy

Award of Prizes and Honors, Commencement, 1897

Alumni Association Prize:

EDWIN PLATT TANNER

Chanler Historical Prize:

MORRIS LINCOLN STRAUSS

Cartwright Prize:

GEORGE W. CRILE, M.D.

Stevens Triennial Prize:

ERVIN A. TUCKER, M.D.

Joseph Mather Smith Prize:

PEARCE BAILEY, M.D.

Prize Lectureship, 1897–1900:

GEORGE JAMES BAYLES, Ph.D.

Toppan Prize:

BENJAMIN GERSON PASKUSZ
Certificate of award dated May 29, 1896

IRVING LEHMAN
Certificate of award dated May 25, 1897

THE COLLEGE

Sophomore Honors

In Germanic Languages and Literatures :

ALFRED EINSTEIN COHN
CHARLES JONES OGDEN

In Romance Languages and Literatures :

WILLIAM ASPENWALL BRADLEY
GEORGE SIDNEY HELLMAN

In Mathematics :

MORITZ WORMSER

Junior Honors

In English Language and Literature :

NATHAN STERN

In Romance Languages and Literatures :

FREDERICK PAUL KEPPEL

In Mathematics :

ROBERT KING MORSE

Final Honors

In English Language and Literature :

JOHN HENRY LYON

In Literature :

MORRIS LINCOLN STRAUSS

In Philosophy :

ARTHUR BARNETT SPINGARN

Alumni Competitive Scholars

Award of 1894
GEORGE RICHARD JACOBUS

Award of 1895
GEORGE SIDNEY HELLMAN

Award of 1896
HARRY HULL ST. CLAIR, Jr.

1897
Not awarded.

Brooklyn Scholars

Award of 1896

HENRY SYDNOR HARRISON ROBERT CHIPMAN HULL
CHARLES JONES OGDEN

Award of 1897

GEORGE HUNTINGTON WALBRIDGE

BARNARD COLLEGE is a college for women, founded in 1889. It is an independent corporation ; but it is a part of the educational system of Columbia University.

TEACHERS COLLEGE is a professional school for the training of teachers, founded in 1889. It is an independent corporation ; but a part of its work is under the oversight of Columbia University, so that it is, to this extent, a part of the university system.

BARNARD COLLEGE

DEAN

Miss Emily James Smith

TRUSTEES

Abram S. Hewitt, LL.D., *Chairman*
Mrs. Joseph H. Choate, *Vice-Chairman*
Hamilton W. Mabie, L.H.D., *Secretary*
George A. Plimpton, *Treasurer*

Mrs. A. A. Anderson
Mrs. Francis B. Arnold
Miss Helen Dawes Brown
Mrs. William C. Brownell
Silas B. Brownell, LL.D.
Frederic R. Coudert, LL.D.
Mrs. Seth Low
Mrs. Alfred Meyer
Mrs. Henry F. Osborn
Mrs. Henry M. Sanders
Edward W. Sheldon
Miss Emily James Smith
George W. Smith
Mrs. James S. T. Stranahan
Mrs. James Talcott
Frederick S. Wait
Everett P. Wheeler

BURSAR

Mrs. N. W. Liggett

DEAN'S SECRETARY

Miss Elizabeth Metcalf

In 1883 the Trustees of Columbia College offered degrees to women who should be able to pass the necessary examinations, without, however, providing instruction for them. The resulting system, called *The Collegiate Course for Women*, proved unsatisfactory to both parties. It was found necessary to provide instruction for women which should be identical with or equivalent to that provided by Columbia to men, and in 1889 Barnard College was organized with this purpose in view. Courses under sixty-five instructors in this University are open to students in Barnard College, in some cases at the College and in some at the University. The College duplicates for women as far as possible the curriculum of Columbia College and also registers for graduate work under the University faculties women who hold the bachelor's degree from institutions of good standing. Examinations for admission to Barnard College, those given in

course, and those for degrees, are conducted by Columbia University. During the first three undergraduate years separate instruction is given to women; in the Senior year they are admitted to certain courses in the University. Graduate students attend many courses at Columbia University under the Faculty of Philosophy. Graduate instruction under the Faculties of Political Science and Pure Science is given at Barnard College.

By the terms of an agreement between Columbia University and Barnard College and Teachers College, students of Teachers College are permitted to attend courses in Barnard College.

This institution offers reciprocal privileges to students of Barnard College.

ADMISSION

Graduate Students.

Women who hold the bachelor's degree from an American college or university of good standing, or an equivalent from a foreign institution of learning, are enrolled without examination under faculties of Columbia University and are required to register in Barnard College. Information in regard to graduate courses is published in separate pamphlets.

Undergraduate Students.

For undergraduates, the requirements for admission are the same as those for admission to Columbia College (pp. 151, *ff.*). The examinations are held on the days and at the hours stated on page 152, at Barnard College. Students who do not wish to proceed to a degree are enrolled as special students; they will, however, in the event of a change of plan, be credited with such of their courses as may coincide with the courses leading to a degree. All special students, with the exceptions specified below, must have passed the examination for matriculation.

Special Students.

Special Students in Political Science.

Persons able to read French and German will be permitted without examination to attend any course under the Faculty of Political Science that they are found competent to undertake.

Special Students in Music

Special students may be admitted to courses in music without examination in other subjects.

SCHOLARSHIPS AND PRIZES

Trustees' Competitive Scholarship.

A scholarship of $150 is awarded annually to the student who is examined at the College in June and passes the best complete entrance examination in all subjects. The papers of the students who pass free from conditions are examined by the Committee of the Faculty on Entrance Examinations, and the student whose papers as a whole entitle her to the first rank is awarded the scholarship.

Ella Weed Scholarship.

A scholarship of $150, founded in memory of Miss Ella Weed by past and present pupils of Miss Anne Brown's School, is awarded annually to a student who needs and deserves assistance.

Veltin School Scholarship.

A scholarship of $150, given by the alumnæ of Mlle. Veltin's School, is awarded annually on the same conditions as the Ella Weed Scholarship.

Brooklyn Scholarships

Twelve scholarships, founded by the Trustees of Columbia University in 1895, in recognition of the gift to Columbia University by President Low of a

memorial building for the Library, are open for competition to candidates for admission to Barnard College who are residents of Brooklyn, N. Y., and have received their training in either the public or the private schools of that city. Three of these scholarships are awarded annually to the three qualified competitors who are examined in Barnard College in June and pass complete entrance examinations in all subjects. The papers of the competitors who pass without conditions will be examined by the Committee of the Columbia College Faculty on Entrance Examinations, and the three students whose papers as a whole are entitled to the highest rank will receive the scholarships.

Each scholarship entitles its holder to receive the sum of $150 per annum during the college course; but if she fail to maintain a standing of at least grade C in all of the courses pursued by her, or if she commit any breach of good order, she shall forfeit the scholarship.

Should any recipient desire, she may, while still retaining the title "Brooklyn Scholar," transfer to any properly qualified candidate from Brooklyn the income from the scholarship; and such action on her part will not be made a matter of public record.

All persons intending to compete for these scholarships must submit satisfactory certificates of character and proficiency from the schools which they have last attended, and must state in writing that it is their intention to spend at least one year at Barnard College.

Curtis Graduate Scholarships

Four scholarships of $150 per annum, founded in the same manner as the preceding, will be awarded annually to the four most satisfactory graduate students. One of these scholarships was awarded in 1896, and one will be awarded in each succeeding year until all are available. Applications should be filed before the 1st of April with the Dean of Barnard College. Blanks for this purpose may be obtained on application to the Dean's Secretary.

Fiske Graduate Scholarship

A scholarship of $250, founded by Mrs. Josiah M. Fiske, will be awarded annually to the most satisfactory graduate student in Political Science. Applications should be filed before April 1st with the Dean of Barnard College. Blanks for the purpose may be obtained on application to the Dean's Secretary.

Herrman Botanical Prize

A prize of $50, founded by Mrs. Esther Herrman, is awarded annually for excellence in botany.

Kohn Mathematical Prize

A prize of $50, founded by Mrs. S. H. Kohn, is awarded annually to a Senior for excellence in mathematics. Competitors for this prize must have pursued mathematics continuously during their college course.

Chemistry Prize

A prize of $25 is awarded annually for excellence in Sophomore chemistry.

Bunner Medal

By the terms of its establishment, the H. C. Bunner Gold Medal (page 24) is open for competition to students in Barnard College.

The College is now established in its new buildings on Morningside Heights, with enlarged laboratories of physics, chemistry, botany, and zoölogy. Students in Barnard College have the use of the University Library. Applications for information should be addressed to *The Dean's Secretary, Barnard College, New York City.*

REGISTER OF STUDENTS

GRADUATE STUDENTS

Andrews, Grace.....New York
B. S., Wellesley College.
Mathematics, *Mechanics*, *Physics*.

Baldwin, Agnes.....Newark, N. J.
A.B., Columbia University.
Greek Language and Literature, *Greek Archæology*, *Latin*.

Belcher, Frances Spaulding.....Farmington, Me.
A.B., Vassar College.
A.B., Radcliffe College.
American History, *History*, *Latin*.

Brown, Marianna Catherine.....New York
A.B., Vassar College.
Education, *History*, *Social Science*.

Bryson, Ella Fitzgerald.....New York
A.B., Columbia University.
Greek, *Latin*, *Greek Archæology*.

Burt, Clara Maria.....Plainfield, N. J.
B.S., Wellesley College.
Chemistry, *Physics*.

Carpenter, Grace.....Poughkeepsie, N. Y.
A.B., Vassar College.
Political Economy and Finance, *Sociology and Statistics*, *American History*.

Clews, Elsie Worthington.....New York
A.B., Columbia University.
A.M., Columbia University.
Education, *Sociology*, *German Philosophy*.

Cochran, Katharine More.....Oneida Castle, N. Y.
A.B., Vassar College.
Philosophy.

Coddington, Emily Matilda.....New York
A.B., London University.
Mathematics, *Mechanics*, *Greek*.

Colgate, Florence.....New York
A.B., Columbia University.
Sociology, *Economics*, *Greek*.

Dow, Caroline Belle.....Detroit, Mich.
A.B., Vassar.
Music.

Dunn, Louise Brisbin.....New York
A.B., Columbia University.
Botany, *Zoölogy*.

Eaton, Isabel.....New York
B. L., Smith College.
Political Economy and Finance, Sociology, Education.

Elkus, Estelle.....New York
A.B., Columbia University.
Mathematics.

Emerson, Dora Bay.....Rockford, Ill.
B.S., Wellesley College.
Literature, Italian.

Furness, Caroline Ellen.....Poughkeepsie, N. Y.
A.B., Vassar College.
Astronomy.

Grieve, Lucia Graeme.....New York
A.B., Wellesley College.
A.M., Wellesley College.
Greek Archæology and Epigraphy, Greek Language and Literature, Hebrew.

Gruening, Rose Bertha.....New York
A.B., Vassar.
Music, French.

Gunton, Ellen.....New York
A.B., Swarthmore College.
Education, Literature, English Language and Literature.

Hall, Alma Cordelia.....New York
A.B., Columbia University.
French.

Hammerslough, Carrie.....New York
A.B., Columbia University.
A.M., Columbia University.
Mathematics, Physics, Italian.

Heald, Lucy.....Worcester, Mass.
A.B., Smith College.
Education, English Language and Literature, Rhetoric and English Composition.

Henderson, Mary Browning.....New York
A.B., Wooster University.
Literature.

Hiscox, Elizabeth Martin.....Newark, N. J.
A.B., Wellesley College.
Latin.

Hurd, Mabel.....Syracuse, N. Y.
B.L., Smith College.
Sociology and Statistics, Political Economy and Finance, European History.

Keys, Alice Mapelsden.....New York
A.B., Columbia University.
A.M., Columbia University.
American History, European History.

Kingsbury, Mary Melinda.....Boston
A.B., Boston University.
Sociology, Economics, History.

Lamont, Florence Corliss.....Englewood, N. J.
B.S., Smith College.
Philosophy, Literature.

Locke, Anna M. ..... Indianapolis, Ind.
A.B., Columbia University.
French.

Minturn, Mildred. ..... New York
A.B., Bryn Mawr College.
Sociology.

Morrill, Lucia. ..... Conway Center, N. H.
A.B., Wellesley College.
Greek.

Nammack, Elizabeth Frances. ..... New York
A.B., Columbia University.
A.M., Columbia University.
Greek, Latin, Botany.

Perkins, Anna Louise. ..... Fresno, Cal.
A.B., Vassar College.
Music.

Phillips, Sara Jay. ..... New York
A.B., Vassar College.
Literature, Education.

Putnam, Bertha Haven. ..... New York
A.B., Bryn Mawr College.
Sociology, Economics, Philosophy.

Sebring, Emma Goodeve. ..... Tarrytown, N. Y.
A.B., Smith College.
A.M., Columbia University.
Education, Psychology, Sociology.

Shaw, Louise. ..... Hackensack, N. J.
A.B., Columbia University.
Sociology.

Smith, Jessie Frances ..... New York
A.B., Vassar College.
A.M., Columbia University.

Stettheimer, Ettie ..... New York
A.B., Columbia University.
Philosophy, Psychology, Literature.

Stratford, Aline Croquet. ..... Brooklyn
A.B., Columbia University.
French, Literature.

Sumner, Anne Porter. ..... New York
A.B., Columbia University.
Greek Language and Literature.
Latin Language and Literature, Philosophy.

Taber, Marion Russell ..... New York
A.B., Bryn Mawr College.
Sociology, Economics, History.

Vail, Clara Warren. ..... New York
A.B., Bryn Mawr College.
Sociology.

Wheeler, Martha Alice. ..... New York
Ph.B., University of Vermont.
Latin.

Wheelock, Adaline Caswell.....New York
A.B., Columbia University.
Literature, English.

Whiton, Helen Isabel.....New York
A.B., Smith College.
A.M., Columbia University.
English Language and Literature.
Germanic Philology, Romance Philology.

Wilcox, Maude.....New Rochelle, N. Y.
A.B., Columbia University.
Political Economy, Sociology, History.

Winfield, Harriet.....Hamburg, N. J.
A.B., Wellesley College.
A.M., Columbia University.
Chemistry, Mathematics, Mineralogy.

Wolff, Gertrude.....New York
A.B , Columbia University.
Latin.

Ziegler, Clara Louise.....Oberlin, O.
A.B., Oberlin College.
A.M., Columbia University.
Literature, English, Education.

SENIOR CLASS

Alward, Fannie Isabel
Berg, Clara de Lissa
Boetzkes, Edith H.
De Hart, Louise Fuller
Farwell, Julia Hutchens
Hall, Anne Richardson
Hawkins, Katharine Stockton
Hughan, Jessie Wallace
Lacey, Louise Elizabeth
Lathrop, Ella Roselle
Leaycraft, Agnes Crawford
Meyer, Anna Emily Helene
Myers, Susan Isabelle
Osborne, Eleanor Frances
Perkins, Alice Jane Gray
Sargent, Jane Isabelle
St. Clair, Helen
Stern, Stella George
Von Sholly, Anna Irene
Watterson, Ada
Wells, Ida Eloise
Wyman, Elizabeth Heywood

JUNIOR CLASS

Brackett, Mary Morrell
Carman, Cerise Emily Agnes
Demarest, Ida May
Dickson, Agnes Lillian
Drew, Georgie Mary
Gildersleeve, Virginia Crocheron
Goodale, Grace Harriet
Hoffman, Adelaide Camilla
Jacobi, Majorie
Kupfer, Elsie Mabel
Mapelsden, Elizabeth Hoffman
Oakley, Helen Marion
Overton, Ruth Cecelia
Reynaud, Aurélie Marie
Seligsberg, Ella Rosina
Smith, Anna Mabel
Stilwell, Alté
Straus, Sara
Striker, Edith Parker
Sumner, Mary Brown
Waddington, Mary Elizabeth
Wohlfarth, Amelia

SOPHOMORE CLASS

Baldwin, Florence Theodora
Barrick, Olive
Barrick, Willina
Cole, Helen
Crawford, Margaret
Duer, Alice
German, Susan Matilda
Goldsborough, Mary Lookerman
Keller, Eleanor
Kingsbury, Stella Frances
Kyte, Florence Leslie
Levy, Martha Washington
Lippincott, Florence
Newborg, Hilda
Oppenheimer, Florence
Ornstein, Martha
Osborne, Evelyn
Potter, Helen
Reiley, Eleanor Ten Broeck
Rosenstein, Sarah Bertha
Schwed, Cécile Heller
Sill, Florence Miller
Speyer, Blanche Freeman
Straus, Sissie Cécile
Van Horne, Katharine
Watkins, Julia Cooper
Werts, Mary Evelyn
Woodhull, Mary Caldwell
Wurzburger, Julie

FRESHMAN CLASS

Beer, Alice
Bergen, Elsa Gubner
Berry, Edith
Bloodgood, Lissa Delavan
Bloomberg, Rose Lea Cushman
Boetzkes, Ottilie Gertrude
Buffington, Margaret
Cameron, Marie Elsie Helen
Catlin, Helen Elizabeth
Crockett, Eleanor Armstrong
Cutting, Harriet Elizabeth
Dederer, Pauline Hamilton
Eaton, Mary Lavinia
Gillespy, Jeannette Bliss
Hanks, Lenda Mary
Heroy, Madalene
Hudson, Clara Elizabeth
Isaacs, Isabel Estelle
Jacobs, Lillie Friedlander
Johnson, Adèle Remsen
Josephthal, Hilda E.
Loveman, Amy
Macbride, Ruth Kirker
Marshall, Margaret Eva
McKim, Christina Louise
Osborn, Bessie May
Pollak, Meta
Roberts, Elizabeth Carpenter
Sanville, Florence Lucas
Schuyler, Sarah Edwards
Seward, Annie Leddell
Squire, Aidine
Townsend, Marian Goodall
Wallach, Alma Frank
Wendt, Cordelia
Whitney, Catharine Elizabeth
Wright, Helen Maria

UNDERGRADUATE SPECIAL STUDENTS

Alden, Harriet
Auerbach, Tillie
Beer, Madelaine
Bonner, Mabel
Boskowitz, Irma Olga
Bruhl, Millie
Crane, Aurelia Blair
Davidson, Elisabeth Griswold
Eckman, Frances
Elkus, Savilla Alice
Fielitz, Carrie H. B.
Fries, Emilie
Gillmore, Mary Brownson
Granger, Anna Dean

Guggenheim, Edyth
Gutman, Josephine
Hills, Franklin Grant
House, Florence Elizabeth
Isaacs, Estelle
Iselin, Ethel May
Jelliffe, Helena Leeming
Jones, Frances F.
Judson, Sarah Elizabeth
Koues, Louise Winthrop
Kraker, Rose Lois
McLaughlin, Mary Atkinson
Meyer, Aline
Meyer, Ruth Bertha
Minturn, Gertrude
Moffett, Jeannette Todd
Paddock, Clara Augusta
Price, Miriam Sutro
Richards, Adeline Mayo
Russert, Marie
Salomon, Viola
Shauck, Helen Camille
Straus, Minnie
Thompson, Maude
Treadwell, Amy
Wait, Elizabeth Christina
Winsor, Mary
Wise, Carrie

SPECIAL STUDENTS IN MUSIC

Albro, Helena Josephine
Alexander, Stella Hadden (Mrs.)
Althaus, Lily
Andrew, Mary Sterns
Bartlett, Frances Raymond
Burdick, Anna van Eps
Chalmers, Mary
Chase, Mary Livingston
Cromwell, May Rebecca
Diller, Mary Angela
Gottschalk, Clara Aimée
Hendricks, Helen Eckman
Hilton, Ida Leigh
Kahmweiler, Bettina J.
Levy, Selma Joanna
Purrington, Amelia Josephine Archer Lily
Reiman, Ida Edith
Stoll, Edith Parkhurst
Thompson, Berenice
Wheeler, Gertrude Patterson

SUMMARY

Graduates	51
Undergraduates	110
Special Students	42
Special Students in Music	20
Total	223

TEACHERS COLLEGE

TRUSTEES

SPENCER TRASK, *Chairman*

WILLIAM F. BRIDGE, *Secretary*

Miss GRACE H. DODGE, *Treasurer*

Mrs. PETER M. BRYSON
Mrs. JOSEPH H. CHOATE
GEORGE W. VANDERBILT
DAVID H. GREER, D.D.
WILLIAM GREENOUGH
B. TALBOT B. HYDE
PETER B. OLNEY
V. EVERIT MACY
WILLIAM G. ROCKEFELLER
FREDERICK F. THOMPSON
NEWBOLD MORRIS
JOSEPH MILBANK
WILLIAM BARCLAY PARSONS
WILLIAM MILLIGAN SLOANE

FACULTY AND OTHER OFFICERS.

President

JOHN FRANCIS WOODHULL, A.B.
Professor of Physical Science

FRANKLIN THOMAS BAKER, A.M.
Professor of the English Language and Literature

VIRGIL PRETTYMAN, A.M.
Principal of the Horace Mann School

EDWARD HOWARD CASTLE, A.M.
Professor of History

MARY DUNCAN RUNYAN
Professor of Kindergarten Methods

HELEN KINNE
Professor of Domestic Science

RICHARD ELWOOD DODGE, A.M.
Professor of Geography

JAMES EARL RUSSELL, Ph.D.
Professor of Psychology and General Method

ALFRED VANCE CHURCHILL
Professor of Art Education

Professor of Manual Training

JOHN HENRY MASON, B.S.
Associate Professor of Manual Training

Associate Professor of Psychology and History of Education

FRANCIS ERNEST LLOYD, A.M.
Associate Professor of Biological Science

CHARLES EARL BIKLÉ, A.M.
Associate Professor of Mathematics

MARY SCHENCK WOOLMAN
Associate Professor of Domestic Art

ELIZABETH G. BALDWIN
Librarian

LUCETTA DANIELL
Registrar

MARY CAMP BRUSH
Assistant Registrar

PURPOSE AND METHODS

The purpose of Teachers College is the training of teachers for elementary and secondary schools. The plan of work involves both theory and practice. All professional courses include observation of children, observation, reports, and criticism of class teaching, preparation of lesson plans, and the teaching of classes in the Horace Mann School.

Teaching in the school is conditioned upon knowledge of subject-matter, of pedagogic principles, and upon specific preparation, and is under the supervision of the department to which belongs the subject taught and of the Department of Psychology and General Method. The Horace Mann School affords opportunity for observation and practice in all grades of school work, from Kindergarten to work preparatory to college and technical schools.

BUILDINGS AND EQUIPMENT

The buildings of the College and Horace Mann School are situated on West 120th and 121st Streets, between Amsterdam Avenue and the Boulevard, opposite the new buildings of Columbia University.

The Macy Manual Arts Building is thoroughly equipped for the Departments of Manual Training and Art Education.

All other departments of the College and School, and also the Bryson Library, the chapel, and the gymnasium, are located in the Milbank Memorial and Main Buildings.

College Hall, situated on the corner of Amsterdam Avenue and 117th Street, furnishes dormitory accommodations for women students under the supervision and care of the principal of the College.

ALLIANCE WITH COLUMBIA UNIVERSITY AND BARNARD COLLEGE

For the purpose of securing to the students of Columbia University, Barnard College, and Teachers College reciprocal advantages and opportunities, an agreement, taking effect July 1, 1893, was entered into between the above-named institutions. By the terms of this agreement certain courses of instruction in Teachers College are accepted as counting toward the Columbia University degrees.

The courses under this arrangement offered by Teachers College in Psychology and General Method, Institutes of Education, School Supervision; and Methods of Teaching Science, English, History, Latin, Greek, and Manual Training are described under the Department of Philosophy, Psychology, and Education (p. 120). Under the Department of Mechanical Engineering, p. 65, are found the courses in shop work offered at Teachers College.

Applications for the Teachers College circular of information or for other printed matter should be made to the *Registrar of Teachers College, Morningside Heights, 120th St., West.*

DIRECTORY OF OFFICERS

The numeral in parentheses after each name refers to the page on which names and titles are given in full.

C. = College Hall. L. = Library. S. = Schermerhorn Hall. E. = Engineering Building. P. = Physics Building. U. = University Building W. = West Building. H. = Havemeyer Hall. P. & S. = College of Physicians and Surgeons. V. C. = Vanderbilt Clinic.

NAME	OFFICE HOURS	OFFICE	RESIDENCE
Aldrich, J., Clin. Asst. (12)		V. C.	
Atwood, C. E., Clin. Asst. (12)		V. C.	
Babbitt, E. H., Instr. (6)	M. to Sat., 9.30	W. 312	
Bailey, F. R., Asst. (10)		P. & S.	1165 E. Jersey st., Elizabeth
Bailey, P., Clin. Asst. (13)		V. C.	
Baker, G. H., Librarian (xi)	M. to Sat., 10–12	L. 202	294 Manhattan ave.
Ball, A. B., Prof. (5)		P. & S.	42 W. 36
Barstow, D. M., Clin. Asst. (13)		V. C.	
Bayles, G. J., Prize Lect. (12)	F., 4	L. 405	Orange, N. J.
Beebe, W. H. H., Sec. (xi)	M. to F., 9–5, Sat., 9–12	L. 213	425 W. 117
Beer, G. L., Lect. (12)			
Bierhoff, F., Clin. Asst. (13)		V. C.	
Biggs, G. P., Dem. (6)		P. & S.	
Bill, E. W., Clin. Asst. (13)		V. C.	
Black, A., Tutor (9)			
Blake, J. A., Asst. Dem. (5)		P. & S.	3 W. 68
Boag, E. T., Registrar (11)		P. & S.	
Boas, F., Lect. (12)	M., 10.30	S. 405	123 W. 82
Bogert, M. T., Instr. (8)	M. to Sat., 2–4	H. 408	259 Broadway, Flushing
Bonar, A. B., Clin. Asst. (13)		V. C.	
Brannan, J. W., Instr. (8)		P. & S.	11 W. 12
Braunlich, A. R., Clin. Asst. (13)		V. C.	
Brewer, G. E., Asst. Dem. (5).		P. & S.	68 W. 46
Brewster, W. T., Tutor (9)			
Britton, N. L., Emer. Prof. (14)			N. Y. Botanical Garden
Brockway, F. J., Asst. Dem. (5)		P. & S.	183 W. 73
Brodt, P. E., Asst. (11)	Tu., Th., 3.30	P. 505	758 West End ave.
Brouner, W. B., Clin. Asst. (13)		V. C.	
Buck, A. H., Clin. Prof. (5)		P. & S.	14 E. 45
Bull, W. T., Prof. (2)		P. & S.	35 W. 35
Burchell, H. J., Jr., Asst. (10)			38 E. 53
Burdick, F. M., Prof. (2)	W., Th., F., 4.30–5	L. 302	115th st., Riverside drive
Burgess, J. W., Prof. (1)	M. to F., 3.30–5	L. 404	323 W. 57
Burr, W. H., Prof. (3)	M. to Sat., 1.30–5.30	E. 403	151 W. 74
Burtenshaw, J. H., Clin. Asst. (13)		V. C.	
Butler, N. M., Prof. (2)	M., W., 2	L. 419	119 E. 30
Cabot, J., Clin. Asst. (13)		V. C.	

NAME	OFFICE HOURS	OFFICE	RESIDENCE
Calkins, G. N., Tutor (8)	Tu., Th., 9–12	S. 604	1 W. 81
Campbell, A., Clin. Asst. (13)		V. C.	
Canfield, G. F., Prof. (3)	M., 4.30–6, Tu., 2.30–3.30	L. 302	32 E. 33
Carmalt, C. C., Asst. Dem. (5)		P. & S.	40 E. 58
Carpenter, G. R., Prof. (3)	Tu., Th., Sat., 9.30	P. 508	501 W. 113
Carpenter, W. H., Prof. (2)	M., W., 1.30, M. to Th., 3.30	W. 316	253 W. 100
Carr, M. L., Clin. Asst. (13)		V. C.	
Carter, C. B., Clin. Asst. (13)		V. C.	
Caswell, W. H., Clin. Asst. (13)		V. C.	
Cattell, J. McK., Prof. (2)	Tu., Th., 1.30	S. 412	Garrison, N. Y.
Chandler, C. F., Prof. (1)		H. 303	51 E. 54
Cheesman, T. M., Instr. (6)		P. & S.	46 E. 29
Chittenden, J. B., Tutor (9)	M., Tu., Th., F., 12.30, W., 10.30–11.30		561 Fifth ave.
Claiborne, J. H., Instr. (7)		P. & S.	39 W. 36
Clark, J. B., Prof. (4)	M., Tu., W., Th., 2.10	W. 404	280 W. 70
Cohn, A., Prof. (3)	M., W., 12.30	W. 301	208 W. 118
Cole, F. N., Prof. (4)	M., 2–3	C. 406	
Colles, C. J., Clin. Asst. (13)		V. C.	
Collins, H. D., Asst. Dem. (5)		P. & S.	119 E. 35
Cowen, W., Instr. (7)		P. & S.	35 E. 60
Cragin, E. B., Sec. Med. Fac. (xi)	M. to Sat., 1.30–2	P. & S.	62 W. 50
Crampton, H. E., Jr., Lect. (12)			
Crary, G. W., Asst. Dem. (6)		P. & S.	152 W. 57
Crocker, F. B., Prof. (3)	M., W., 2–5	E. 503	44 W. 44
Cunningham, R. H., Dem. (5)		P. & S.	200 W. 56
Curtis, C. C., Tutor (9)			
Curtis, E., Emer. Prof. (14)			120 B'way
Curtis, H. S., Asst. (10)	M., W., F., 10.30–3.30	P. 401	New Canaan, Conn.
Curtis, J. G., Prof. (1)		P. & S.	327 W. 58
Cushing, H. A., Tutor (9)	F., 1.30–2.30	W. 414	251 W. 54
Dade, C. T., Clin. Asst. (13)		V. C.	
Darling, E. A., Supt. (xi)	M. to F., 10–11	L. 110	116th st., Boulevard
Davis, H. S., Tutor (9)	M. to S., 11–12.30	P. 606	1744 Amsterdam ave.
Day, A. M., Asst. (10)	M., W., 3	W. 412	
Day, W. S., Asst. (11)	F., 9.30–12.30	P. 401	203 W. 85
Dean, B., Adj. Prof. (4)	M., Tu., 9–12		20 W. 82
Delafield, F., Prof. (1)		P. & S.	12 W. 32
Delavan, D. B., Instr. (8)		P. & S.	1 E. 33
Derleth, C., Jr., Asst. (10)	M. to F., 2.30–5	E. 509	634 E. 135
Draper, W. H., Prof. (4)		P. & S.	19 E. 47
Draper, W. K., Instr. (7)		P. & S.	19 E. 47
Duffie, C. R., Chap. Emer. (14)			
Dunning, W. A., Prof. (3)	M., W., 12.30–1	L. 409	Hotel Empire

NAME	OFFICE HOURS	OFFICE	RESIDENCE
Dwight, J., Jr., Clin. Asst. (13)		V. C.	
Egbert, J. C., Jr., Adj. Prof. (4)	Tu., W., 12.30–1.30	C. 310	364 Webster ave., Jersey City Heights
Egleston, T., Emer. Prof. (14)			35 Wash. Sq.
Eliot, E., Jr., Instr. (7)		P. & S.	48 W. 36
Ely, L. W., Clin. Asst. (13)		V. C.	
Ewing, J., Instr. (8)		P. & S.	260 W. 57
Farrand, L., Instr. (6)	Tu., 12.30	S. 405	12 E. 29
Ferris, A. W., Clin. Asst. (13)		V. C.	
Fisher, G. F., Bursar (xi)	M. to F., 9–5, Sat., 9–12	L. 109	
Fiske, T. S., Prof. (4)	Tu. Th., 11.30	C. 401	
Floy, F. H., Asst. (12)		P. & S.	
Foote, E. M., Clin. Asst. (13)		V. C.	
Fox, G. H., Clin. Prof. (5)		P. & S.	18 E. 31
Foyé, A. E., Instr. (6)	M., W., F., 3–5	E. 508	163 W. 79
Franz, S. I., Asst. (11)	W., 10.30	S. 411	62 Cottage st., Jersey City
Freeborn, G. C., Instr. (6)		P. & S.	215 W. 70
Freedman, W. H., Tutor (8)	M. to F., 10.30–11.30	E. 505	157 W. 119
Frothingham, R., Clin. Asst. (13)		V. C.	
Fuld, J. E., Clin. Asst. (13)		V. C.	
Fulton, C. H., Asst. (11)	M. to Sat., 9.30–12.30, 1.30–2.30	H. 206	229 Fifth ave., Bklyn
Gallaudet, B. B., Dem. (5)		P. & S.	162 W. 83
Germann, G. B., Asst. (10)	Tu. Th., 9.30–10.30	C. 404	352 W. 120
Gibney, H. W., Clin. Asst. (13)		V. C.	
Gibney, V. P., Clin. Prof. (5)		P. & S.	16 Park ave.
Giddings, F. H., Prof. (3)	Tu., 3.30, F., 2	W. 406	150 W. 79
Gilley, W. C., Clin. Asst. (13)		V. C.	
Goodhart, P. C., Clin. Asst. (13)		V. C.	
Goodnow, F. J., Prof. (2)	M., W., 3.30–4.30	L. 408	49 Riverside drive
Gordon, R., Instr. (7)	Th., 9.30–11.30	P. 408	315 W. 71
Gottheil, R. J. H., Prof. (2)			
Hallock, W., Adj. Prof. (3)	Tu., 1.30–2.30, Sat., 12.30–1.30	P. 404	213 W. 135
Hamlin, A. D. F., Adj. Prof. (2)	M., F., 11.30–12.30	H. 613	261 Warburton ave., Yonkers
Hardon, H. W., Prof. (4)	Th., F., 10	L. 305	313 W. 71
Harpham, F. E., Obs. Comp. (11)	M. to Sat., 9.30–4.30	P. 602	65 W. 11
Harriman, C. A., Instr. (6)	M. to F., 9.30–10.30, W., Th., F., 2.30–5	H. 605	174 W. 109
Harrington, T. H., Asst. (10)		E. 603	West Chester
Hartley, F., Instr. (6)		P. & S.	46 E. 34
Hartwell, J. A., Clin. Asst. (13)		V. C.	
Hawkes, F., Clin. Asst. (13)		V. C.	

NAME	OFFICE HOURS	OFFICE	RESIDENCE
Hayden, J. R., Instr. (7)		P. & S.	107 W. 55
Hervey, W. A., Tutor (9)	Tu., Th., 3.30	W. 314	607 W. 138
Higgins, J. J., Clin. Asst. (13)		V. C.	
Hill, E. Y., Clin. Asst. (13)		V. C.	
Hiss, P. H., Jr., Asst. (10)		P. & S.	
Hobbs, A. B., Clin. Asst. (13)		V. C.	
Hodenpyl, E., Instr. (7)		P. & S.	143 W. 73
Hodgson, J. H. P., Clin. Asst. (13)		V. C.	
Holbrook, F. M., Asst. (11)	M. to F., 9–5	E. 206	645 Prospect ave.
Holden, W. A., Clin. Asst. (13)		V. C.	
Hollick, A., Tutor (8)	M., 9.30–5.30, Tu., Th., F., 9.30–12.30	S. 302	New Brighton
Hooper, F. C., Asst. (11)	M. to Sat., 9 30–1.30	E. 407	463 Manhattan ave.
Hornbostel, H. F., Asst. (11)	M., W., F., 2.30–5	H. 601	Flatlands, N.Y.
Hotchkiss, L. W., Instr. (8)		P. & S.	49 W. 50
Howe, H. M., Prof. (4)	M., W., F., 10.30–11.30	H. 104	27 W. 73
Huber, F., Instr. (8)		P. & S.	209 E. 17
Huber, J., Clin. Asst. (13)		V. C.	
Hunt, R., Tutor (9)		P. & S.	121 W. 61
Huntington, G. S., Prof. (2)		P. & S.	50 E. 73
Hutton, F. R., Prof. (1)	M. to F, 10.30–11.30, 12.30–1.30	E. 304	296 Lex. ave.
Hyslop, J. H., Prof. (4)	M. to F., 1.15	L. 416	519 W. 149
Jackson, A. V. W., Prof. (3)	M., 10.30	W. 405	16 Highland pl., Yonkers
Jackson, F. W., Instr. (7)		P. & S.	12 W. 18
Jackson, G. T., Instr. (8)		P. & S.	14 E. 31
Jacobi, A., Clin. Prof. (4)		P. & S.	110 W. 34
Jacoby, H., Adj. Prof. (4)	Tu., Th., 9.30–10.30	P. 608	15 W. 53
James, W. B., Instr. (8)		P. & S.	268 Mad. ave.
Jaquish, B. M., Asst. (10)		P. & S.	
Jarman, G. W., Instr. (7)		P. & S.	61 W. 74
Johnson, A. B., Clin. Lect. (5)		P. & S.	46 W. 17
Joüet, C. H., Asst. (11)	W., F., 12.30–1.30	H. 505	Roselle
Julien, A. A., Instr. (6)	M. to F., 10–12	S. 303	71 E. 87
Keener, W. A., Prof. (2)	W., 4.30, Th., F., 12.30 and 4.30	Law Library	86 E. 56
Kelly, E., Lect. (12)			
Kemp, J. F., Prof. (3)	M., W., F., 10.30–11.30, Tu., Th., 11.30–1.30	S. 403	211 W. 139
Kennedy, J. M., Clin. Asst. (13)		V. C.	
Keyes, H. E., Asst. (10)			
Keyser, C. J., Tutor (9)		C. 408	751 Amsterdam ave.
Kinnicutt, F. P., Prof. (5)		P. & S.	W.

NAME	OFFICE HOURS	OFFICE	RESIDENCE
Kirchwey, G. W., Prof. (2)	M., 10–11, Tu., 2–3, W., 12–1	L. 414	472 Lafayette ave., Bklyn
Knapp, C., Asst. (10)			
Knapp, H., Prof. (5)		P. & S.	26 W. 40
Kress, M. K., Curator (12)	M. to F., 2–4.30	H. 610	248 W. 42
Kroeber, A. L., Asst. (11)	M., Tu., Th., 10.30	P. 507	316 W. 89
Lambert, W. E., Clin. Asst. (13)		V. C.	
Larkin, J. H., Asst. (10)		P. & S.	498 W. 130
Laudy, L. H., Tutor (8)	M. to F., 9–5	H. 313	15 W. 65
Leaming, E., Instr. (7)		P. & S.	
Lee, F. S., Adj. Prof. (4)		P. & S.	202 W. 81
Lefferts, G. M., Clin. Prof. (5)		P. & S.	6 W. 33
Lewis, R., Jr., Instr. (7)		P. & S.	14 E. 45
Lockwood, G. R., Instr. (7)		P. & S.	44 W. 49
Loiseaux, L. M. A., Tutor (8)	Th., 2.30	W. 304	106 W. 105
Low, Seth, Pres. (1)		L. 213	
Luquer, L. McI., Tutor (8)		S. 306	8 Pierrepont st. Bklyn
Lyle, W. G., Clin. Asst. (13)		V. C.	
McBurney, C., Prof. (5)		P. & S.	28 W. 37
McCosh, A. J., Clin. Lect. (5)		P. & S.	22 E. 56
McCrea, N. G., Instr. (7)	M., W., 1.30	C. 309	533 Franklin ave., Bklyn
McEvoy, J. P., Clin. Asst. (13)		V. C.	
McGinnis, E. H. L., Asst. (11)		P. & S.	329 Amsterdam ave.
McGregor, J. H., Asst. (11)	M., W., F., 9.30–12.30	S. 617	388 St. Nicholas ave.
McHale, F. S., Clin. Asst. (13)		V. C.	
McIlhiney, P. C., Asst. (10)	M. to F., 9.30–12.30	H. 102	320 St. Nicholas ave.
McLane, J. W., Prof. (1)		P. & S.	51 W. 38
MacDowell, E. A., Prof. (4)	W., 12, Sat., 2	W. 113	Hotel Majestic
Maclay, J., Instr. (7)			
MacVannel, J. A., Asst. (10)	M., 1	L. 419	601 Lex. ave.
Mallett, E. P., Clin. Asst. (13)		V. C.	
Mallett, G. H., Clin. Asst. (13)		V. C.	
Markoe, F. H., Instr. (8)		P. & S.	15 E. 49
Markoe, T. M., Emer. Prof. (14)			500 Mad. ave.
Martin, W., Asst. Dem. (5)		P. & S.	63 E. 56
Mason, L. I., Clin. Asst. (13)		V. C.	
Matthews, B., Prof. (3)	W., 3.30	P. 502	681 West End ave.
May, C. H., Instr. (7)		P. & S.	692 Mad. ave.
Mayer, R. E., Instr. (6)	M. to F., 9.30–12.30, 2.30–5	E. 602	
Mayo-Smith, R., Prof. (1)	M., W., F., 2.30–3.30	L. 403	305 W. 77
Metcalfe, J. T., Emer. Prof. (14)			Cold Spring, N. Y.
Miller, E. H., Instr. (7)	Tu. to F., 10.30–11.30	H. 506	

NAME	OFFICE HOURS	OFFICE	RESIDENCE
Mills, J. M., Clin. Asst. (13)		V. C.	
Moore, J. B., Prof. (2)		W. 410	524 W. 150
Morgan, J. L. R., Tutor (9)	M. to Sat., 9.30–4.30	H. 411	New Brunswick, N. J.
Moses, A. J., Prof. (2)		S. 307	
Müller, G., Asst. (11)			
Munroe, H. S., Prof. (1)	Tu., Th., 2.30	H. 308	45 Sidney pl., Bklyn
Nelson, C. A., Deputy Librarian (xi)	M. to Sat., 9.30–1.30, 2.30–5	L. Reading Room	19 Decatur st., Bklyn
Neumann, W. F., Asst. (12)		P. & S.	
Noble, H., Lect. (12)	M., Tu., 4.30–5.30	L. 411	47 E. 44
Norrie, Van H., Instr. (7)		P. & S.	21 W. 37
Norris, C., Tutor (9)		P. & S.	
Odell, G. C. D., Tutor (9)	Tu., 2.30–3.30 Th., 10.30–12.30	P. 507	112 W. 81
Osborn, H. F., Prof. (2)	M., Tu., W., 11.30–12.30	S. 608	850 Mad. ave.
Osgood, H. L., Prof. (2)	Tu., 4.30–5.30	W. 408	526 W. 150
Otis, F. N., Emer. Prof. (14)			5 W. 50
Page, C. H., Tutor (9)	W., F., 11.30	W. 307	128 W. 103
Parker, C. T., Asst. (11)		P. & S.	46 E. 34
Parker, H. C., Tutor (8)	M. to F., 10.30–12.30	P. 401	21 Fort Greene pl., Bklyn
Partridge, W. T., Lect. (12)			
Peabody, G. L., Prof. (2)		P. & S.	57 W. 38
Peck, H. T., Prof. (2)	Tu., Th., 12.30	C. 301	New Rochelle
Peck, M. R., Clin. Asst. (13)		V. C.	
Peele, R., Adj. Prof. (3)	M., W., F., 11.30–12.30		The Monterey
Pellew, C. E., Adj. Prof. (4)	M., T., W., 1.30–2.30, Th., 12.30–4.30	H. 409	51 E. 54
Perry, E. D., Prof. (3)	M., W., 1.15–2	C. 304	133 E. 55
Peterson, F., Instr. (8)		P. & S.	60 W. 50
Pfister, J. C., Tutor (8)	M. to F., 11.30–12.30, 2.30–3.30	P. 614	240 Sixth ave., Roseville, Newark
Plummer, J. F., Jr., Asst. Sec. (xi)	M. to F., 9–5, Sat., 9–12	L. 213	44 E. 35
Price, T. R., Prof. (1)	M. to Th., 1.30	P. 509	263 W. 45
Proben, C. I., Clin. Asst. (13)		V. C.	
Prudden, T. M., Prof. (3)		P. & S.	160 W. 59
Pupin, M. I., Adj. Prof. (3)	M., W., F., 12.30–1	E. 301	7 Highland pl., Yonkers
Putnam, C. R. L., Clin. Asst. (13)		V. C.	
Quackenbos, J. D., Emer. Prof. (14)			331 W. 28
Ransom, C. C., Clin. Asst. (13)		V. C.	
Rathbone, C. C., Clin. Asst. (13)		V. C.	

NAME	OFFICE HOURS	OFFICE	RESIDENCE
Rees, J. K., Prof. (1)	M., W., F., Sat., 10.30–11.30, Tu., Th., 9.30–10.30	P. 610	1 W. 72
Richards, G. A., Clin. Asst. (14)		V. C.	
Richards, H. M., Tutor (9)			
Ricketts, P. de P., Prof. (2)	Tu. to F., 3.30–4.30	H. 507	
Ringwalt, R. C., Asst. (10)	Tu., Th., 3.30–4.30	P. 505	112 W. 81
Ripley, W. Z., Prize Lect. (12)			
Robinson, J. H., Prof. (4)	Tu., Th., 10–10.30	L. 403	170 W. 85
Rockwell, W. H., Jr., Asst. Dem. (6)		P. & S.	109 W. 78
Rogers, J. D., Asst. (10)	Th., 12.30–1	C. 306	111 W. 95
Rood, O. N., Prof. (1)	M. to Sat., 12.30	P. 301	
Savage, W. L., Phys. Dir. (xi)	Tu., Th., S., 2–6	Gymnasium	115 W. 71
Seligman, E. R. A., Prof. (2)	Tu., Th., 3–3.30, 4.30	L. 309	324 W. 86
Sever, G. F., Instr. (6)	Tu., Th., 10.30–12.30	E. 504	115 W. 47
Seward, S. S., Jr., Asst. (11)	M., 11.30	P. 511	113 W. 85
Shepherd, W. R., Prize Lect. (12)	M., W., F., 1.30–3.30	W. 416	
Sherman, F. D., Adj. Prof. (3)	M., Tu., 2.30–4.30	H. 603	312 S. B'way, Yonkers
Sherman, H. C., Asst. (11)	Tu., W., Th., F., 11.30	H. 505	
Shrady, A. M., Clin. Asst. (14)		V. C.	
Silver, L. M., Clin. Asst. (14)		V. C.	
Simpson, W. K., Clin. Asst. (14)		V. C.	
Sloane, W. M., Prof. (4)	Tu., Th., 2.30–3.30	W. 417	109 E. 69
Small, J. K., Curator (12)	M. to Sat., 9–6	S. 503	The Elmer
Smith, F. P., Tutor (9)		P. & S.	
Smith, Munroe, Prof. (1)	Tu., F., 2.30–3	L. 403	115th st., Riverside drive
Snelling, G. T., Instr. (6)	Tu., Th., 11.30–12.30	H. 602	Hotel Beresford
Speranza, C. L., Adj. Prof. (4)	Tu., Th., 2.30–3.30	W. 305	128 E. 63
Starr, M. A., Prof. (2)		P. & S.	22 W. 48
Steese, E. S., Clin. Asst. (14)		V. C.	
Stein, J. B., Clin. Asst. (14)		V. C.	
Stiefel, B. W., Clin. Asst. (14)		V. C.	
Stieglitz, L., Clin. Asst. (14)		V. C.	
Stone, W. S., Instr. (7)		P. & S.	260 W. 57
Strong, C. A., Lect. (12)	Sat., 12.30	S. 406	Lakewood, N.J.
Strong, O. S., Tutor (9)	Tu., A.M., W., F., P.M.,	S. 612	380 St. Nicholas ave.
Struthers, J., Tutor (8)		H. 105	624 E. 136
Sumner, A. E., Clin. Asst. (14)		V. C.	

NAME	OFFICE HOURS	OFFICE	RESIDENCE
Taylor, H. L., Clin. Asst. (14)		V. C.	
Taylor, H. O., Lect. (12)	M., F., 2.30–3.30	P. 511	52 E. 57
Taylor, R. W., Clin. Prof. (5)		P. & S.	40 W. 21
Terrell, A. G., Clin. Asst. (14)		V. C.	
Terry, C. T., Lect. (12)	Tu. to F., 4.15–4.30, 5.30–6	L. 412	1 W. 81
Thacher, J. S., Dem. (5)		P. & S.	33 W. 39
Thomas, C., Prof. (4)	Tu., Th., 11.30–12, Tu. to F., 9.15–9.30	W. 310	83 Highland ave., Yonkers
Thomas, T. G., Emer. Prof. (14)			600 Mad. ave.
Tilton, B. T., Clin. Asst. (14)		V. C.	
Todd, H. A., Prof. (3)	M., W., 4.30	W. 303	824 West End ave.
Townsend, S. G. F., Asst. (11)	M. to F., 9.30–5.30	E. 501	131 Fifth ave.
Trenwith, W. D., Clin. Asst. (14)		V. C.	
Trowbridge, C. C., Tutor (9)	M., W., F., Sat., 11.30–12.30	P. 401	7 E. 46
Tucker, E. A., Tutor (9)		P. & S.	110 W. 57
Tucker, S. A., Tutor (9)	M., Th., F., 9.30–12.30	H. 421	135 Mad. ave.
Tufts, F. L., Asst. (11)	M., W., F., 3.30–4.30	P. 303	157 E. 51
Tuttle, G. M., Prof. (2)		P. & S.	49 W. 38
Tyson, H. H., Clin. Asst. (14)		V. C.	
Underwood, L. M., Prof. (4)	Tu., Th., 11.30–12.30, W., 10.30–12.30	S. 506	
Van Amringe, J. H., Prof. (1)	Tu., Th., 11.30	C. 205	204 W. 44
Van De Water, G. R., Chaplain (xi)	Tu., Th., 12.45–3	W. 415	2067 5th ave.
Van Gelder, A. P., Tutor (9)	W., 10.30–12.30	H. 305	331 W. 145
Van Gieson, I. T., Instr. (6)		P. & S.	1 Mad. ave.
van Ingen, G., Curator (12)	M. to F., 2–3	S. 101	244 E. 50
Voorhees, J. D., Instr. (7)		P. & S.	
Vosburgh, A. S., Asst. Dem. (6)			
Vulté, H. T., Instr. (7)		P. & S.	157 E. 51
Wade, H. T., Asst. (10)	M. to F., 10.30	P. 303	149 E. 46
Walker, J. B., Asst. Instr. (8)		P. & S.	33 E. 33
Ward, F. S., Asst. (11)		P. & S.	
Ware, W. R., Prof. (1)	W., Th., F., 12.30	H. 607	126 E. 28
Warren, C. P., Tutor (9)	Tu., Th., 9.30–10.30	H. 602	19 W. 34
Warren, G. W., Organist (xi)	M. to F., 12–12.15	S. 509	40 W. 59
Waters, B. H., Clin. Asst. (14)		V. C.	

NAME	OFFICE HOURS	OFFICE	RESIDENCE
Weir, R. F., Prof. (3)		P. & S.	37 W. 33
Wells, D. C., Asst. (10)	M., W., Th., 9.30–11.30	P. 201	109 Willow st., Bklyn
Wells, J. S. C., Instr. (6)	M. to S., 10.30–2.30	H. 513	Box 81, Hackensack
Wheeler, J. R., Prof. (4)	Tu., 11.30		433 W. 117
White, T. G., Asst. (10)	M. to Sat., 10.30–11.30	P. 401	39 W. 26
Whitlock, H. P., Asst. (10)			
Whitman, R., Instr. (7)		P. & S.	126 Central pk., S.
Wilde, N., Asst. (10)	M., 1.30–2.30	L. 416	80 Ludlow st., Yonkers
Williams, W. R., Asst. (11)		P. & S.	
Williamson, E. L., Clin. Asst. (14)		V. C.	
Wilson, E. B., Prof. (3)			
Wood, F. C., Asst. (11)		P. & S.	
Woodberry, G. E., Prof. (3)	M., F., 3.30	P. 511	5 E. 17
Woodward, B. D., Instr. (6)	Tu., 3.30	W. 306	462 W. 22
Woodward, R. S., Prof. (3)	M., W., F., 11.30–12.30, Th., 10.30–12.30	P. 406	180 Claremont ave., Montclair
Woolson, I. H., Instr. (6)		E. 606	201 Franklin st., Astoria
Yohannan, A., Lect. (12)	W., 1.30–2.30	W. 403	138 E. 48
Young, C. H., Inst. (6)	Tu., 12.30–1.30	C. 307	308 W. 58
Young, J. V. D., Clin. Asst. (14)		V. C.	

DIRECTORY OF STUDENTS

The italic letter following the name indicates the school in which the student is primarily registered—as follows :

c College.
l School of Law.
m School of Medicine.
p School of Pure Science.
ph School of Philosophy.
pl School of Political Science.
s Schools of Mines, Chemistry, Engineering, and Architecture.

The numbers 1, 2, 3, and 4 preceding these letters indicate the classes ; sp means special student.

Abbe, T., 3 *m*, 489 West End ave.
Abbott, T. J., 2 *m*, 118 W. 64
Abramovich, O., 1 *s*, 211 W. 62
Acken, G. A., 3 *c*, 2 W. 14
Ackerman, W. A., *ph*, 257 W. 134
Acton, H. W., 2 *s*, 82 W. 132
Adams, A. B., 2 *l*, 344 Manhattan ave.
Adams, C. B., 2 *m*, 330 W. 59
Adams, E. K., grad. *s*, 455 Mad. ave.
Adams, H. W., Jr., 1 *l*, 18 W. 102
Addoms, L. P., 3 *m*, 270 McDonough st., Bklyn
Addy, A. R., 3 *m*, 300 W. 70
Adelsohn, J., 1 *m*, 88 E. 108
Adenaw, A. P. F., 1 *s*, 116 E. 26
Adler, M. L., 3 *m*, 28 Gouverneur st.
Adler, M. S., 2 *m*, 150 Orchard st.
Agatstein, S., 2 *m*, 108 E. 90
Akers, W. A., sp *p*, 134 W. 91
Alexander, A. J. A., 1 *m*, 141 W. 63
Alexander, B., 3 *l*, 65 E. 93
Alexander, D. E., 2 *m*, 51 E. 127
Allee, W. H., Jr., 3 *m*, 318 W. 57
Allen, C., 1 *s*, 28 W. 83
Allen, J. R., 1 *s*, 417 W. 117
Allen, W. K., 1 *l*, 10 E. 115
Allen, W. T., 2 *m*, 154 Lorimer st., Bklyn
Alsberg, C. L., 2 *m*, 169 E. 116
Alsberg, H. G., 2 *c*, 169 E. 116
Alsberg, J., 4 *c*, 169 E. 116
Alter, J., 1 *m*, 9 Montgomery st.
Ambler, N. B., 2 *s*, 344 W. 33
Ames, B. H., 1 *l*, 39 W. 58
Anderson, A. E., sp *p*, 916 Greene ave., Bklyn
Anderson, E. O., 4 *c*, 141 E. 34
Anderson, J. W., 1 *l*, 564 Henry st., Bklyn
Anderson, R. W. K., 1 *c*, 78 Worth st.
Andrews, A. S., 3 *l*, 140 W. 57
Andrews, B. F., 1 *m*, 117 W. 63
Anspacher, L. K., *ph*, 152 W. 131
Anthony, A., sp *p*, 234 W. 76
Antony, C. L., 3 *m*, 220 E. 123
Appel, H. N., 3 *m*, 226 Clinton st., Bklyn
Applegate, W. H., 1 *m*, 130 W. 61
Appleton, F., *ph*, Sedgwick pk., Fordham
Aquaro, J., 4 *m*, 68 Crosby st.
Arbuthnot, T. S., 4 *m*, 316 W. 72
Arendt, M., 4 *s*, 42 W. 126
Armstrong, D., 1 *c*, Rahway
Armstrong, H., 1 *s*, Grand Union Hotel
Armstrong, W. B., 3 *m*, 330 W. 57
Arnegard, K., 1 *l*
Arnold, H. N., 2 *l*, 101 W. 78
Aronson, E. A., 3 *m*, 241 E. 116
Ashley, R. L., *pl*, 520 W. 123
Assenheimer, E. M., sp *c*, 323 E. 51
Austin, C. A., 1 *l*, 56 W. 49
Averill, M. K., 4 *c*, 7 W. 120
Aylmer-Small, C. S., 3 *s*, Passaic Bridge, N. J.

Bacon, R., 2 *l*
Bagster-Collins, E. W., *ph*, 84 W. 120
Bailey, F. R., sp *m*, 1165 E. Jersey st., Elizabeth

Bailey, J. McC., 1 *l*, 318 W. 57
Bailey, T., 3 *m*, 118 W. 74
Bainton, J. H., 1 *m*, 9 W. 65
Baird, A. W., 3 *m*, 239 W. 70
Baker, C. A., 3 *c*, 294 Manhattan ave.
Baker, C. G., 1 *l*
Baker, E. B. G., 1 *l*
Baker, E. W., 1 *c*, 119 W. 121
Baker, J. L., 1 *m*,
699 Putnam ave., Bklyn
Baldwin, H., sp *ph*, 41 E. 69
Ball, W. L., 3 *l*, 61 W. 104
Ballin, M. J., 2 *m*, 73 E. 91
Bamberger, R. S., 2 *m*, 60 W. 92
Bandler, L., 2 *m*, 60 W. 51
Bang, D. C., 1 *m*, 165 W. 64
Banks, W. T., 3 *m*, 356 W. 57
Banta, E. W., 2 *m*, 157 W. 14
Barclay, H., 3 *m*, 37 W. 46
Barcus, J. S., 2 *l*, 697 West End ave.
Bard, E. R., 2 *s*, 273 W. 11
Bard, S. W., 1 *s*, 273 W. 11
Barker, S., 1 *c*, 160 W. 59
Barkley, C. B., 1 *l*, 44 E. 69
Barnard, E. L., 1 *l*, 20 W. 130
Barnes, G. E., 3 *m*, 346 W. 58
Barnett, E. L., 3 *m*, 139 W. 63
Barron, T. H., sp *c*, 116 E. 64
Barry, T. J., 3 *m*, 137 E. 49
Barshell, S., 4 *m*, 231 E. 82
Bartberger, E. W., 1 *s*, 372 W. 120
Bartlett, F. H., *ph*, 18 W. 93
Barton, F. W., 2 *m*, 103 W. 63
Bastedo, W. A., 3 *m*, 121 W. 61
Bates, L. W., 2 *s*,
583 Carlton ave., Bklyn
Bates, W. H., sp *m*,
Batman, L. G., sp *ph*, 41 E. 69
Baum, J. M., 1 *l*, 326 E. 50
Bauman, L., 1 *m*, 286 E. 3
Baumann, A. P., 2 *s*, 228 E. 52
Baumgarten, W. E., 1 *s*,
1259 Washington ave.
Baxter, F. E., 1 *c*, 118 W. 81
Baxter, H. T., 1 *s*,
47 St. Felix st., Bklyn
Baxter, W. P., 2 *l*, 381 West End ave.
Bayles, E. A., 2 *l*,
408 Main st., Orange
Bayles, H., 2 *m*, White Plains
Bayne, H., 1 *s*,
Riverside drive, 108th st.
Beadel, G. W., 1 *s*, New Brighton
Beadel, H. L., 4 *s*, 120 Front st.
Beal, G. R., 2 *c*, 1 W. 121
Beard, A. McC., 3 *l*, 165 W. 80
Beard, W. M., 2 *l*, 165 W. 80
Beatty, A. C., 4 *s*, 3 E. 9
Bebee, E. L., 2 *m*, 447 W. 57
Beck, E. C., 1 *c*, 37 E. 31
Beck, O. C., 3 *s*, 45 St. Mark's pl.
Becker, L., 2 *l*, 506 W. 157
Beebe, C. W., sp *p*, East Orange
Beer, E., 3 *m*, 38 W. 77
Belcher, H. J. B., sp *m*, Paterson
Belden, W. A., 3 *s*, 318 W. 78
Bell, C. E., 3 *l*, 417 W. 117
Bell, C. F., 1 *s*, 1204 Boston rd.
Benedict, A. C., 1 *m*, 86 Convent ave.
Benedict, E., 2 *s*, 86 Convent ave.
Benedict, E. S., 2 *l*, 14 E. 70
Benedict, J. D., 2 *l*,
344 Manhattan ave.
Benjamin, M., 4 *m*, 196 Alexander ave.
Bennett, D. C., Jr., 3 *l*, 262 W. 128
Bennett, G. L., 4 *s*,
208 Putnam ave., Bklyn
Bennett, R. S., 3 *m*, 300 W. 70
Bensel, W. A., 1 *c*, 111 W. 126
Bentel, G. E., 1 *l*, 9 W. 31
Bentley, W. A., 4 *s*, 161 W. 108
Benton, F. L., sp *m*,
1063 Bergen st., Bklyn
Berger, J., 3 *s*, 342 E. 4
Bernheim, G. B., 1 *s*, 74 E. 79
Bernstein, E. P., 2 *m*, 227 E. 116
Bero, E. J., 4 *m*, 259 Henry st.
Betts, A. G., *p*, 174 W. 126
Beveridge, J. W., 1 *m*, 48 Wall st.
Bice, H. H., sp *ph*, 52 W. 65
Bieber, J., 2 *m*, 113 Cannon st.
Bigelow, R., 2 *s*, 56 W. 54
Biggs, C. L., *pl*, 225 W. 99
Bigham, H. J., 2 *l*, 1240 Lex. ave.
Bill, P. W., 1 *m*, 243 W. 56
Binder, R. M., sp *ph*, 352 W. 20
Bing, A. M., 1 *l*, 21 W. 88
Bingham, A. W., 2 *m*, 118 W. 64
Bingham, L. M., 2 *c*, 73 W. 92
Birckhead, H. McC., 3 *c*,
441 Park ave.
Birckhead, J., 3 *m*, 441 Park ave.
Bird, H. K., sp *c*, 1 E. 39
Birkholz, J. A., sp *ph*, 233 E. 69
Birnbaum, M., 1 *l*, 939 2d ave.
Bissell, A. H., *pl*, 174 Grand st., Jersey City
Bissell, P., 1 *m*, 115 W. 49
Black, J. F. J., 2 *m*, 318 W. 57
Blackford, U. G., 1 *l*, 306 W. 104
Blackmar, J. S., 4 *m*
Blagden, P., 1 *s*, 33 W. 73
Blair, E., sp *s*, 372 W. 120
Blake, J. E., 4 *m*,
Y. M. C. A., West 57
Bleick, T. E., 3 *m*, 431 W. 57
Bliss, R. F., 1 *m*,
233 Cumberland st., Bklyn

Block, A. L., 1 *c*, 138 W. 97
Blondel, T., Jr., 3 *s*, 548 Mott ave.
Blue, J. H., 1 *m*
Blum, E., 3 *s*, 1919 Mad. ave.
Blumenthal, J. L., 2 *m*, 1204 E. 167
Bodkin, D. G., 3 *m*,
999 De Kalb ave., Bklyn
Boehm, A. A., 1 *c*, 41 W. 89
Boehm, G. N., 2 *l*, 130 E. 78
Boehm, H. A., 1 *s*, 41 W. 89
Boese, W. H., 1 *c*, 115 Charlton st.
Bogart, E. L., sp *pl*, Yonkers
Bogue, M. G., 2 *c*,
836 Union st., Bklyn
Bohm, O. H., 1 *m*, Neperan, N. Y.
Boldnan, C. F., 1 *m*,
226 Glenmore ave., Bklyn
Bolte, H. A., 2 *l*, 18 E. 109
Bonnell, C. H., sp *m*, 21 W. 60
Bonsall, V. F. M., 1 *c*, 160 W. 95
Bonynge, P., 2 *l*, 224 W. 120
Bookman, A., 1 *m*, 9 E. 62
Boone, E. W., 1 *c*, 135 W. 90
Boote, C. W., 2 *l*,
128 Webster ave., Yonkers
Borden, W. H., sp *s*, 249 W. 23
Boroschek, L., 1 *s*, 149 E. 56
Bos, G., 1 *s*, 230 W. 18
Bostwick, W. A., 4 *s*, 324 W. 46
Bowman, G. S., *pl*, 49 W. 21
Bowman, H. H., 3 *c*, Montclair
Bowman, J. F., 2 *c*,
130 Grove st., Montclair
Boyd, A., 1 *s*, 34 W. 49
Boyd, A. S., 3 *m*, 363 W. 56
Boyd, E. A., 1 *m*,
880 St. Nicholas ave.
Boyesen, H. H., 2 *c*, 23 E. 77
Boyd, J. D., 3 *s*, 308 W. 73
Bradley, W. A., 3 *c*, 683 E. 138
Bradner, F. C., 3 *m*, 129 Lex. ave.
Bradshaw, P. H., 1 *c*, Orange
Brady, F. L., 3 *m*, 42 W. 60
Brandeis, J. W., 3 *m*, 113 E. 122
Brandon, V. I., 1 *s*, 58 W. 89
Brant, O. R., 3 *l*, Kingsbridge
Breckwedel, H. B., 2 *m*, 315 W. 48
Bremer, A. M., 1 *l*, 69 E. 86
Brewster, J. H., Jr., 3 *l*, 2 W. 101
Briesen, H., 1 *s*, Weehawken
Briggs, H. A., *pl*, 41 E. 69
Briggs, W. P., 2 *s*, 2301 7th ave.
Brill, A., 2 *m*, 32 Ave. C
Brinsmade, D. B., 2 *m*, 118 W. 64
Briody, J. F., 4 *m*, Paterson
Britenstool, H., 1 *m*, 214 E. 50
Brittingham, A. De W., 1 *s*,
133 E. Lincoln ave., Mt. Vernon
Britton, H. B., 1 *s*, 255 W. 75
Brodie, O. L., 1 *s*, 372 W. 120
Brooke, W. W., 2 *m*,
915 Ave. C, Bayonne
Brooks, F. H., *ph*, 122 W. 103
Brooks, R. H., 2 *c*, 351 W. 121
Brophy, W. A., 1 *m*, 364 W. 53
Bross, W. W., 3 *c*, Montclair
Brower, F. D., 1 *c*,
Riverside drive, 109th st.
Brown, B., *p*
Brown, C., 1 *s*, 301 W. 77
Brown, E. M., 4 *m*, 243 W. 56
Brown, H. A., 2 *s*, Rutherford
Brown, H. D., 4 *s*, 9 W. 129
Brown, T. E. W., 2 *m*
Bruce, E. B., sp *c*, Yonkers
Bruen, H. M., sp *ph*, 41 E. 69
Brueninghausen, H. W., 1 *c*,
155 Hancock st., Bklyn
Bryan, R. C., 3 *m*, 137 W. 64
Bryant, R. R., 1 *m*, 143 W. 61
Brydges, R. L., *ph*, Islip, N. Y.
Bubb, H. A., 1 *m*, 28 W. 61
Buchhotz, G. W., 1 *s*, 263 W. 88
Buchtel, F. C., 1 *m*, E. Orange
Buck, V. B., Jr., 4 *s*, 161 W. 108
Buckingham, T. S., 1 *s*, 374 W. 116
Buckley, C. F., 4 *m*,
802 Carroll st., Bklyn
Budds, B. C., 1 *s*, 339 W. 30
Buerger, L., 1 *m*, 164 W. 133
Buffington, R. E., 1 *m*,
Short Hills, N. J.
Bühler, J. S., 1 *c*, 127 W. 86
Bulkley, H. D., 1 *c*, 4 E. 37
Bulkley, L. C., 4 *c*, 4 E. 37
Bullard, F. L., 1 *c*, 302 Mad. ave.
Bullwinkle, F., 3 *m*,
433 Franklin ave., Bklyn
Burgess, M. G., 4 *m*, 335 W. 58
Burke, C. C., Jr., 4 *c*, 17 E. 55
Burke, W. M., *pl*, 242 W. 121
Burlingame, F. A., 1 *l*, 22 E. 78
Burnett, L. H., 2 *l*
Burns, D. J., 2 *s*, 423 W. 117
Burns, W. G., 4 *s*, 423 W. 117
Burnside, C. H., 4 *s*, 372 W. 120
Burrows, F. R., 3 *l*, 47 W. 49
Burt, H. R., 1 *s*, 59 W. 52
Busby, A. H., 4 *m*, 127 W. 72
Butler, C. A., sp *c*,
753 Amsterdam ave.
Byers, M. W., 3 *l*, 687 West End ave.
Byington, R., Jr., 2 *m*, 150 W. 66

Cable, B. S., 3 *l*
Cabot, J., Jr., 3 *s*, 126 W. 48
Cady, T. W., 1 *m*, 36 W. 61

Cairns, B. S., 3 *s*, 40 Grove st.
Cairns, D. W., 1 *m*, 40 Grove st.
Caldwell, A., sp *c*, Bay Ridge
Calhoun, W. C., 4 *m*,
7 Hamilton Terrace
Callan, H. A., 1 *m*,
156 Park ave., Yonkers
Cameron, W. S., 2 *s*, 239 W. 136
Campbell, A. J., grad. *s*, 120 W. 81
Campbell, C. W., 4 *m*,
212 Lenox ave.
Campbell, E. F., 1 *s*, Larchmont
Campbell, H., 3 *m*, 325 W. 58
Campbell, W. A., sp *ph*, 162 E. 90
Cane, M. H., 2 *c*, 62 E. 80
Cardozo, E. A., 3 *c*, 45 E. 65
Cardozo, M. H., Jr., 1 *c*, 45 E. 65
Carhart, G. A., 3 *m*, 346 W. 58
Carleton, S., 4 *m*, 62 W. 49
Carmalt, J. W., 2 *l*, 56 W. 96
Carman, T. D., 1 *c*, 5 W. 82
Carmiencke, A. G., sp *ph*, 410 W. 23
Carpender, J. N., Jr., 1 *m*, 7 W. 31
Carpenter, H. C., 3 *s*, 113 E. 69
Carr, S. D., 1 *l*, 417 W. 117
Carrington, W., 1 *s*,
801 High st., Newark
Carruthers, L. J., 2 *l*, 246 Lenox ave.
Carter, W. F., 3 *l*, 551 W. 125
Cary, J. W., 1 *s*, 322 W. 113
Casamajor, W., 3 *s*,
372 Greene ave., Bklyn
Cassard, W. J., Jr., 2 *s*, 139 W. 70
Cassebeer, H. A., Jr., 2 *m*, 1 W. 68
Caswell, K. L., 4 *s*, 114 E. 31
Catlin, G. de G., 2 *c*, 29 E. 28
Cauthers, J. B., 2 *l*, 857 Lex. ave.
Celler, H. L., 2 *m*, 61 W. 94
Chandler, F. W., *ph*,
177 S. Oxford st., Bklyn
Chapman, H., 3 *s*,
160 Hicks st., Bklyn
Charlton, H. R., 2 *m*,
306 S. 6th ave., Mt. Vernon
Chase, A. McC. P., *pl*
Chase, L. N., *ph*, 522 W. 123
Cherry, W. S., 3 *m*, 244 W. 71
Chibas, L. F., 2 *s*, 143 W. 43
Chollet, C., *ph*, 129 W. 40
Churchill, M., sp *ph*, Reform Club
Cimiotti, W. F., 1 *m*, 221 2d ave.
Clark, A. S., 3 *m*, 137 W. 64
Clark, H., Jr., 2 *c*, 318 W. 82
Clark, J. B., 4 *m*, 137 W. 64
Clark, T., 1 *s*, 1283 Columbus ave.
Clark, V. S., *ph*, 1283 Columbus ave.
Clark, W. G., 3 *s*, 37 E. 50
Clarke, A. V., 4 *m*, 2297 7th ave.
Clarke, H. E., 4 *m*, 138 W. 61
Clarke, H. J. B., 1 *s*, 19 E. 9
Clarke, W. C., 3 *m*, Tenafly
Clarke, W. J., 2 *l*, 148 E. 45
Cleveland, T., Jr., *ph*, 8 E. 54
Clinch, E. S., Jr., 1 *s*, 133 W. 121
Clyde, J. P., *pl*, 41 E. 69
Coan, P. M., 2 *c*, 67 E. 54
Cobb, W. B., 1 *l*, 360 W. 120
Cochran, G. H., 2 *m*, 101 W. 73
Cochrane, F. L., 2 *m*,
830 Butler st., Bklyn
Coffee, R. I., 2 *c*, 736 Lex. ave.
Coffin, H. L., 3 *l*, 576 Lex. ave.
Coffin, T. R., 3 *s*, 258 W. 72
Cogan, H. M., 3 *s*, 320 W. 115
Cohen, M., 4 *m*,
138th st., Amsterdam ave.
Cohn, A. E., 2 *c*, 64 E. 66
Cohn, D., 3 *l*, 83 Auburn st., Paterson
Cohn, H., 1 *m*, 638 High st., Newark
Cohn, M., 3 *l*, 83 Auburn st , Paterson
Cohn, S. E., 1 *m*, 101 E. 61
Cole, A. T., 1 *l*, 350 W. 115
Cole, L. G., 4 *m*,
861 President st., Bklyn
Cole, L. T., *ph*, 63 W. 96
Cole, R. G., 3 *c*
Collins, J. J., 4 *m*, 25 W. 65
Colt, M., 1 *s*, 222 W. 45
Comstock, W. W., 4 *c*, 256 W. 55
Conant, R. L., *ph*, 423 3d st., Bklyn
Condit, J. D., 1 *m*, 415 W. 55
Connell, E. J., Jr., 2 *m*, Bedford pk.
Connolly, F. E., 1 *m*,
795 Lafayette ave., Bklyn
Conover, J. H. P., 4 *m*, 137 W. 57
Conover, J. T., 4 *s*, 324 W. 19
Conville, J. J., 2 *l*, 145 E. 45
Cook, C. V., 1 *m*, 164 W. 64
Cook, H. R., 4 *c*, 2265 7th ave.
Cook, W. W., 1 *l*,
22 Livingston ave., Yonkers
Cooke, A. S., 1 *m*, 591 Mad. ave.
Cooke, W. E., 3 *l*, 58 E. 25
Cooley, A. W., 3 *l*, West Chester
Corbin, I., 1 *s*,
296 McDonough st., Bklyn
Corbin, J., 2 *l*, 402 W. 124
Cornaz, E., *ph*, 119 W. 92
Cornell, R. T., 1 *s*, 67 W. 83
Corning, W. B., 3 *c*,
88 St. Nicholas ave.
Corse, A. W., 1 *l*, 129 W. 94
Corwin, N. S., 1 *l*, 2055 7th ave.
Cory, H. C., 4 *m*,
735 Highland ave., Newark
Costello, R. R., 2 *l*, 129 E. 71
Cotter, J. J., 4 *m*, 129 W. 64
Cowen, T. B., 2 *l*, 402 W. 124

Cowperthwait, F. N., 1 *s*,
5 Mt. Morris pk., W.
Cox, R., Jr., 4 *m*, 348 W. 58
Cox, W. N., 1 *l*, Windsor Hotel
Coykendall, F., 1 *s*
Coykendall, R. B., 1 *c*,
Hotel Marie Antoinette
Cram, G. E., 1 *m*, 243 W. 56
Crampton, C. W., 2 *m*, 133 W. 123
Crane, C. G., 2 *m*, 25 W. 23
Crawford, H. E., 3 *s*, 220 W. 28
Crawford, W. B., 3 *m*, 231 W. 71
Creeden, E. L., 1 *m*, 232 E. 18
Cregier, A. M., 1 *s*, Mt. Vernon
Cronin, W., 2 *m*
Cross, C. E., 1 *s*,
1879a Pacific st., Bklyn
Cross, F. B., 2 *m*, 6 W. 66
Culbertson, H. C., 2 *l*,
Spuyten Duyvil
Cummings, C. S., 3 *l*, 170 W. 105
Cummings, J. J., 3 *m*, 412 W. 57
Cummins, A. G., Jr., *ph*,
Hotel Balmoral
Cunningham, J. A., 2 *m*,
129 6th st., L. I. City
Curran, J. D., 1 *m*, 36 W. 61
Curran, P. J., 1 *m*, 100 W. 64
Curran, R. A., 1 *c*, 107 E. 57
Curry, F. H., 4 *c*, New Brighton
Curry, R., 1 *s*, New Brighton
Curtiss, A. L., 2 *l*, 24 W. 49
Cushing, E. W., 1 *l*, 308 W. 114
Cushman, E. L., *ph*, 239 W. 131
Cutright, W. B., *pl*, 327 W. 112

Daley, D. W., sp *s*, 372 W. 120
Daly, E. H., 3 *l*, 19 E. 62
Daly, E. H., 4 *s*, 1064 Mad. ave.
Darling, E. F., 2 *m*, 111 W. 68
Darrach, B., Jr., 1 *s*, 306 W. 115
Darrach, W., 1 *m*, 317 W. 58
Davenport, E. W., 4 *c*, 101 W. 118
Davenport, F. M., *pl*, 101 W. 118
Davidson, J. MacB., 3 *m*,
110 7th ave., Bklyn
Davidson, L. P., sp *ph*, 41 E. 69
Davis, B., sp *p*, 904 Lex. ave.
Davis, D. T., 3 *l*, 15 E. 62
Davis, F., Jr., 3 *m*, 57 W. 48
Davis, M. M., Jr., sp *c* 206 W. 139
Dawson, R., sp *pl*, Boonton, N. J.
Day, A. W., 1 *m*, 140 52d st., Bklyn
Day, S. E., 3 *l*, 3 W. 63
Dayton, H., 4 *m*, 25 E. 46
Deal, F. H., 3 *l*, 200 W. 119
Deane, S., 3 *c*, 40 W. 59
De Beaumont, V. E., 1 *c*,
723 Columbus ave.
de Castro, R., Jr., 1 *m*, 243 W. 136
Deely, G. E., 2 *m*, 129 W. 61
de Forest, H. L., 1 *l*, 7 Wash. sq.
de Forest, J., 2 *l*, 7 Wash. sq.
Deignan, J. H., 2 *l*, 854 E. 134
De Kay, W., 1 *c*, 27 W. 11
de la Fuente, J., 2 *s*, 358 W. 118
Delgado, F. P., 1 *c*, 328 W. 57
De Long, F. S., 1 *m*, 312 W. 59
Delson, I., 3 *s*, 203 E. 69
Demarest, J. W., 4 *c*, Queens, N. Y.
de Mille, W. C., 2 *s*,
56 Morningside pk.
Deming, S. C., 2 *l*, 230 W. 105
Dempewolff, A. F., 2 *m*,
11 Manhattan st.
Denison, R. F., 1 *l*, 361 W. 123
Dennis, A. L. P., *pl*, 301 Lex. ave.
Denny, R. C., 1 *s*, 36 Park pl.
Denton, E. W., 3 *l*, New Hyde Pk.
Denzer, S. W., 3 *c*, 113 W. 130
Depew, F., 4 *c*, 150 W. 121
De Witt, W. A., 3 *c*, 133 W. 78
de Young, A. B., 4 *c*, 125 W. 77
Dickerson, F. S., 3 *s*, 29 Cliff st.
Dickey, C. L., *ph*, 41 E. 69
Dickinson, H. T., 1 *s*, 212 W. 80
Dieterich, A. E., 3 *s*, 963 5th ave.
Dill, H. T., sp *s*, 256 W. 128
Dillenback, G. P., 1 *c*, 132 W. 77
Dillenberg, J. S., 3 *m*, 325 E. 62
Dinwiddie, R. E. L., sp *ph*
Ditman, N. E., 2 *m*, Englewood
Dixon, J., 1 *s*, Flushing
Dixon, S. H., 2 *c*, West Chester
Dixon, W. H., 2 *c*, 29 W. 49
Dobbs, J. F., *ph*, 41 E. 69
Dodd, E. L., 2 *m*,
196 Clinton ave., Newark
Doggett, W. H., sp *pl*, 41 E. 69
Donnellan, G. L., 1 *c*, 883 6th ave.
Donohue, F. B., 2 *m*,
253 Main st., Paterson
Donovan, P. G., 3 *m*, 509 W. 59
Doob, I. E., 1 *l*, 219 E. 61
Doran, M., Jr., 3 *l*, 44 W. 46
Dorman, F. A., 4 *m*, 318 W. 57
Dorman, H. G., 2 *m*, 318 W. 57
Doud, C. H., 1 *s*, 240 W. 121
Dougherty, R. E., 1 *s*, 244 W. 20
Doughty, I. L., Jr., 4 *m*,
643a Greene ave., Bklyn
Douglas, J., 4 *m*, 145 W. 81
Downs, A. S., 3 *m*, 34 W. 61
Doyle, J. F., 2 *s*, 227 W. 121
Drake, W. W., 1 *m*, 137 W. 80
Dresser, F. G., 4 *c*, 111 E. 28
Drew, J. B., 1 *l*, 118 W. 115
Driscoll, D. M., 2 *m*, 143 W. 61

Dryfoos, A. D., 3 *m*, 22 W. 69
Du Bois, W. C., 1 *s*, 35 W. 34th st., Bayonne
Duden, H., 1 *c*
Duden, W., 2 *c*, Bronxville
Duffey, B. E., 1 *l*
Duffield, F., 2 *m*, 28 E. 28
Duffield, R. F., 2 *c*, Hollis, N. Y.
Duggan, S. P., *pl*, 533 Lex. ave.
Duncan, O. B., 1 *m*, 202 Carroll st., Paterson
Duncan, R. K., *p*, 116 W. 59
Dunn, A. D., 4 *s*, 164 E. 111
Dunning, H , sp *c*, 357 W. 117
Dunseith, J. G., 1 *m*, 354 W. 42
Durham, K., 1 *c*, 125 Brooklyn ave., Bklyn
Durham, L., 3 *s*, 162 W. 27
Durning, C. F., 4 *m*, 412 W. 57
Dusenbury, A. N., 1 *s*, 71 W. 95
Dutton, I. J., 1 *l*,
Dwyer, J. W., 2 *m*, Garfield, N. J.
Dyer, J. O., 4 *m*, 113 E. 28
Dynes, J. H., *pl*, 280 St. Nicholas ave.

Eakins, O. M., 3 *m*, 141 Water st., Paterson
Earl, W. P., 4 *m*, 335 W. 58
Eastmond, C., 1 *c*, 199 Mad. st., Bklyn
Eaton, A. R., Jr., 1 *m*, 1141 E. Jersey st., Elizabeth
Eberle, C. F., 3 *l*
Eccles, D. C., 2 *s*, 320 W. 115
Eccles, G. W., *ph*, Bay Side
Echarte y Martos, E., 1 *m*, 243 W. 136
Eckerson, C. H., 4 *s*, Closter, N. J.
Edgerton, F. C., 4 *m*, 143 W. 64
Edson, H. A., 1 *s*, 313 W. 74
Edwards, C. H., 4 *c*
Edwards, C. W., *p*, 21 2d ave.
Edwards, E. J., Jr., 1 *c*
Edwards, J. A., 2 *c*, 144 W. 58
Egner, H. W., Jr., 3 *l*, 1015 Broad st., Newark
Ehrenreich, J J., 3 *s*, 48 E. 74
Ehret, G., Jr., sp *c*, 1197 Park ave.
Ehrhorn, O. W., 3 *l*, 215 9th ave.
Einbigler, B. F., 3 *l*, 316 W. 113
Einstein, L. D., 4 *c*, 39 W. 57
Eising, E. H., 4 *m*, 6 E. 66
Eisner, J., 3 *l*, 158 E. 72
Eldert, H. C., 3 *c*, 347 W. 123
Eldridge, G. D., Jr., 2 *l*, Palisade ave., Riverdale
Elkin, H. J., 1 *m*, 793 St. Nicholas ave.
Elleau, L. A., 4 *s*, 1 W. 107
Ellenbogen, J. K., 1 *l*, 223 W. 122
Eller, F. W., 1 *s*, 243 E. 118
Elliman, K. B., 1 *c*, Flushing
Elliott, R. A., 3 *l*, 244 W. 72
Elliott, R. H., sp *s*, 310 W. 113
Ellis, H. H., 4 *m*,
Ellison, M. H., 2 *l*, 48 E. 87
Ellison, M. H., 2 *l*, 1893 Mad. ave.
Elmer, C. H., 2 *c* 189 Lenox ave.
Elmore, E. F., 3 *l*, 61 W. 51
Emerson, H., 3 *m*, 81 Mad. ave.
Emhoff, E. E., *ph*, 41 E. 69
Emmert, E. J., sp *m*, 219 W. 42
Engel, W. F., 1 *m* 10 Stuyvesant ave., Bklyn
Engle, W. D., *p*, 413 W. 145
Englesby, W. H., sp *m*, 10 W. 35
Enteen, J., sp *c*, 278 Broome st.
Entz, G. G., 2 *s*, 24 E. 83
Erdal, O. W., 2 *s*, 358 W. 118
Erdman, P., sp *ph*, 41 E. 69
Erkiletlian, D. H., 1 *m*, 348 W. 55
Ernst, B. M. L., 3 *c*, 233 W. 113
Erskine, J., 2 *c*, Weehawken
Esser, J. H., 1 *c*, 209 Sidney ave., Mt. Vernon
Evans, M. D., 1 *c*, 177 W. 79
Everitt, C. V., 2 *m*, 38 Boyd ave., Jersey City
Eyer, G. A., sp *p*, 255 W. 122

Fackenthal, J. D., 2 *c*, 93 Rodney st., Bklyn
Fahnestock, C., 2 *m*, 457 Mad. ave.
Fahnestock, E., 2 *m*, 457 Mad. ave.
Faile, M. B., 1 *s*, 53 W. 49
Fairlie, J. A., *pl*, 364 W. 118
Falck, A., 2 *l*, 29 E. 132
Falconer, B. McL., 1 *c*, 8 E. 62
Falk, H. L., 3 *l*, 117 E. 60
Falk, K. G., 1 *s*, 995 Mad. ave.
Falk, M. S., 3 *s*, 995 Mad. ave.
Farley, E. J., 3 *l*, 10 West 84
Farnsworth, P. T., Jr., 2 *l*
Farrell, J. A., sp *m*, 438 W. 57
Fay, C. J., 2 *l*
Fechheimer, A. L., 3 *s*, 57 W. 56
Feeter, S. S., 1 *m*
Feldman, M., 2 *s*, 133 E. 84
Fellowes, C., Jr., 1 *s*, Marie Antoinette Hotel
Fendrich, A. E., 2 *m*, 428 W. 41
Ferguson, G., 4 *s*, Paterson
Ferry, D. M., Jr., 4 *c*, 417 W. 117
Fiedler, E. C., Jr., 1 *s*, 60 W. 39
Field, F. P., 1 *m*, 656 Lex. ave.
Finch, E. R., 3 *l*, 417 W. 117
Finney, A. H., 2 *l*, 520 W. 123

Finnigan, J. J., 2 *c*, 108 Amsterdam ave.
Firth, E. W., grad. *s*, 473 14th st., Bklyn
Fishel, L., 1 *l*, 122 W. 97
Fisher, F. V., 1 *s*, White Plains
Fisher, H., 3 *s*, 108 E. 70
Fisher, J. T. B., *pl*, Decatur ave., Bedford pk.
Fisher, R. M., 1 *s*, Mt. Vernon
Fiske, W. M. L., Jr., 2 *c*, 484 Bedford ave., Bklyn
Fitch, C. W., 3 *m*, 139 W. 63
Fitzgerald, C. F., 4 *m*, 129 W. 64
Fitz-Gerald, J. D., II., *ph*, Newark
Flanagan, E. J., 2 *l*, 388 Sackett st., Bklyn
Fleischmann, C. R., 2 *l*, 10 E. 73
Fleischmann, E. H., 2 *l*, 1523 Mad. ave.
Fleming, C. L., Jr., 3 *l*, 845 St. Nicholas ave.
Fletcher, N. DeL. L., 3 *c*, 180 E. 93
Flett, G. C., sp *pl*, 41 E. 69
Fliess, R. A., 3 *s*, 201 W. 55
Flom, G. T., *ph*, 360 W. 120
Flood, G. J. B., 1 *m*, 316 W. 34
Floyd, R., 3 *m*, 36 W. 68
Foehrenbach, H. P., 1 *m*, 409 W. 46
Fogarty, J. N., 4 *m*, 105 W. 64
Foote, E., Jr., 4 *s*, 30 W. 11
Foote, S. K., 3 *m*, 243 W. 99
Forbes, C. S., 1 *c*, 133 E. 29
Ford, A. H., grad. *s*, 318 W. 113
Ford, H. C., 2 *s*, 310 W. 18
Forsch, A., 1 *c*, 31 W. 86
Forsythe, F. W., 3 *l*, 229 W. 121
Fort, G. P., 3 *c*, 347 W. 123
Foster, G. H. D., 3 *l*, 47 W. 49
Foster, O. R., 3 *s*, 377 Quincy st., Bklyn
Fowler, A. A., 3 *c*, 60 E. 68
Fowler, C. H., 2 *l*
Fowler, E. P., 2 *m*, 18 E. 58
Fowler, W. W., *ph*, 310 W. 123
Fox, C. F., sp *pl*, Bronxville
Fox, G. H., 4 *m*, 18 E. 31
Fox, J. C., 1 *m*, 123 Brooklyn ave., Bklyn
Franc, J. J., 2 *l*, 216 Lenox ave.
France, M. J., 2 *c*, 933 Kent ave., Bklyn
Frank, A. A., 3 *s*, 308 W. 90
Frank, M. L., 1 *c*, 111 E. 72
Frank, R. T., 2 *m*, 17 E. 61
Frankel, J. D., 1 *s*, 104 E. 81
Frankle, B. B., 4 *m*, 19 W. 89
Franklin, C. M., 4 *m*, 356 W. 57
Frazer, H. T., 1 *m*, 41 W. 45
Frentzel, L. W., sp *m*, Wallington, N. J.
Freund, J., Jr., sp *s*. Hastings
Friedmann, J. L., 2 *l*, 109 E. 78
Frierson, J. N., 2 *l*, 134 W. 73
Frissell, L. F., 2 *m*, 125 W. 47
Frost, H. R., 2 *l*, 133 W. 103
Fry, H. J., 2 *m*, 36 W. 24
Fry, W. H., *pl*, 319 9th st., Bklyn
Fulda, C., 1 *m*, 107 Kent st., Bklyn
Fuller, M. B., 1 *m*, 165 W. 64
Fuller, P., Jr., 1 *c*, 30 Washington sq.
Fulton, A. M., Jr., 1 *l*
Funk, J. A., 2 *m*, 447 W. 57
Furman, R., 3 *m*, 134 W. 65
Furnald, R. B., 1 *c*, 18 W. 46

Gabriel, C. J., 1 *m*, 308 15th ave., Newark
Gabriel, M. S., *pl*, 341 W. 23
Gale, S. S., 1 *m*, 141 W. 64
Gallatin, A. R., 4 *s*, 58 W. 55
Gallatin, F., Jr., 1 *c*, 58 W. 55
Gallatin, G., 2 *c*, 670 5th ave.
Gallatin, J. N., 1 *c*, 58 W. 55
Galt, J. M., 1 *l*
Gammack, A. J., sp *ph*, 175 9th ave.
Gardiner, P. P., 2 *c*, Garden City
Gardner, A. H., 4 *m*, 348 W. 56
Garretson, W. Van P., 1 *m*, 176 Clerk st., Jersey City
Garrety, W. P., 1 *m*, 340 W. 27
Gates, C. M., sp *pl*, 41 E. 69
Geiger, F. C., 1 *c*, 31 Union sq.
Gennert, H., 2 *l*, Greenville, N. J.
Gennert, W. O., 2 *l*, Greenville, N. J.
Gentzlinger, C. F., 2 *l*, 316 2d ave.
George, F. S., 3 *m*, 135 W. 64
Geppert, R. M., 4 *s*, 20 Mercer st., Newark
Gershel, M., 2 *m*, 19 E. 99
Getman, J. E., 3 *m*, 216 W. 59
Geyer, H. C., 3 *m*, 78 2d st.
Gibbs, J. P., 1 *m*
Gibson, J. J., 1 *l*, 136 Lex. ave.
Gibson, J. L., *p*, 320 W. 115
Gibson, S. A., 2 *l*, 543 Manhattan ave.
Giddings, H. S., 2 *c*, 150 W. 79
Gieschen, A. H., 2 *m*, 46 E. 124
Giffin, I., 3 *c*, 311 Lincoln ave., Orange
Gilbert, C. W., sp *pl*, 444 Carlton ave., Bklyn
Gilbert, F. N., 3 *l*, 168 State st., Bklyn
Gillette, C., 1 *m*, 24 W. 40
Gilman, R., sp *s*, Hempstead

Gilmour, A. J., 3 *m*, 139 W. 61
Gilsey, G. L., 1 *c*, 80 Mad. ave.
Godwin, P. H., 3 *s*, 125 W. 122
Goerwitz, W., 1 *s*, 190 3d ave.
Goff, J. W., Jr., 1 *c*, 319 W. 104
Goldberg, B., 3 *l*, 157 E. 72
Goldberg, J., 1 *m*, 157 E. 72
Goldberg, L., 2 *l*, 316 E. 116
Golden, P. N., 1 *s*, Elizabeth
Goldman, C., 1 *m*, 1 Pike st.
Goldmark, H., 3 *l*,
626 Greene ave., Bklyn
Goldstein, E. S., 3 *s*
Goode, E. L., 1 *s*,
Goodell, G. A., *p*, 1283 Columbus ave.
Goodelman, S., 2 *l*, 448 E. 84
Goodenough, R. J., 2 *s*,
18 7th ave., Bklyn
Goodfriend, H., 4 *m*, 338 E. 78
Goodman, J., 4 *s*, 611 6th st.
Goodman, M., 2 *m*, 338 E. 4
Goodridge, F. G., 1 *m*, 250 5th ave.
Goodridge, M., 4 *m*, Flushing
Goodwillie, R. H., 2 *s*, 154 W. 34
Gordon, G. A., *ph*, 41 E. 69
Gotthelf, A. H., *p*
Gottschall, L., 4 *s*, 207 E. 53
Gould, E. W., 3 *m*, 539 W. 144
Gould, J. W., 2 *c*, 246 14th st., Bklyn
Gouverneur, W., sp *c*, 32 E. 22
Gow, R. A., 1 *m*,
830 Butler st., Bklyn
Grace, W. H., 1 *c*, 52 E. 79
Grace, W. R., Jr., 1 *s*, 31 E. 79
Graeser, H. R. A., 4 *m*, 89 E. 4
Graham, J. F., 2 *m*
Graham, J. W., Jr., 1 *l*
Gramm, F. E., 1 *s*, 137 E. 52
Grannis, A., *ph*, Caldwell, N. J.
Grannis, P. E., 2 *c*, 306 W. 115
Grant, H. R., 1 *c*, 45 Park pl.
Grant, J. E., 2 *m*, 206 W. 88
Grausman, P. M., 2 *m*, 136 W. 64
Graves, H. C., 3 *c*, 347 W. 123
Gray, A. W., 3 *m*, 346 W. 58
Gray, H. D., *ph*, 524 W. 123
Gray, J., 1 *c*, 246 14th st., Bklyn
Gray, L. H., *ph*, 212 W. 121
Green, N. W., 4 *m*, 91 Park ave.
Green, R. C., 1 *s*, Newtown, N. Y.
Green, S. G., 2 *m*, 431 W. 57
Greene, M. E., 2 *s*, 417 W. 23
Greene, R. C., 3 *l*, 912 West End ave.
Greenway, W. B., *ph*, 41 E. 69
Greenwood, A. J., sp *m*
Gregg, H. W., 1 *s*, 354 Manhattan ave.
Gregory, W. K., 2 *c*, 179 W. 10
Greil, G., 1 *m*, 10 E. 75
Gretsch, B. J., 1 *m*, 334 E. 77
Griffin, A. B., 1 *m*,
882 St. Nicholas ave.
Griffin, B. B., *p*, 2058 Vanderbilt ave.
Griffiths, W. J., Jr., 2 *s*,
317 S. 8th ave., Mt. Vernon
Gros, F., 2 *l*, 352 W. 120
Gros, H. E., 2 *l*, 352 W. 120
Grosner, B. A., 2 *l*, 1041 Lex. ave.
Gross, J. C., 3 *m*, 1205 Park ave.
Gross, M., 4 *m*, 416 W. 57
Grossmann, L., 1 *m*, 209 E. 106
Grout, G. H., 1 *m*, 165 W. 64
Gumaer, A. H., 4 *s*,
292 Pavonia ave., Jersey City
Gunn, G. B., 3 *s*,
139 Munn ave., East Orange
Gunter, C., 1 *m*

Haas, H. L., 4 *c*, 483 West End ave.
Haas, L. F. W., 4 *m*, 773 Forest ave.
Haberstroh, A., 1 *m*, 2523 11th ave.
Hackett, F. S., 2 *c*, 7 W. 107
Hackett, H. S., 1 *l*, Hotel Manhattan
Haight, C. S., 4 *s*, 150 W. 86
Hailey, W. P., 3 *m*
Haines, E. L., *p*, New Rochelle
Hall, C. H., 1 *m*,
427 Waverly ave., Bklyn
Hall, F. S., *pl*, 56 Morningside pk.
Hall, G. H., sp *m*, 163 W. 63
Hall, H. N., 3 *s*,
204 Hancock st., Bklyn
Hall, J. H., 1 *l*, 543 Manhattan ave.
Hall, L. H., 1 *l*, 545 W. 125
Hall, M. F., 3 *m*, 153 W. 61
Halsey, F. R., 1 *c*,
957 Boulevard, Astoria
Halsey, R. H., 2 *m*, 318 W. 57
Hanan, J. T., 3 *m*, 317 W. 56
Hanauer, S., 3 *l*, 310 W. 115
Hanscom, H. C., 2 *m*, 224 W. 121
Hanson, H. O., 1 *c*, 622 E. 160
Harden, A. D., 2 *l*, 44 W. 46
Harding, F. L., sp *m*,
63 Nelson pl., Newark
Hargrave, G. E., 2 *l*, 281 W. 118
Harrington, H. S., 3 *c*
Harrington, N. R., *p*, 18 W. 43
Harris, H. S., *pl*, 41 E. 69
Harris, I. R., 1 *l*, 305 Henry st.
Harris, M., 3 *l*,
39 Cleveland st., Orange
Harris, W. S., 1 *l*, 416 W. 54
Harrison, H. S., 2 *c*,
145 Montague st., Bklyn
Harrison, J. S., 3 *c*,
72 William st., Orange
Hart, G. G., sp *m*, Larchmont
Hart, G. W., 1 *m*, 89 Ross st., Bklyn

Hartman, W. L., 1 *m*, 275 2d st.
Hasbrouck, H., 1 *c*, 39 W. 90
Hasbrouck, J. R., sp *m*
Hashi, H., *pl*, 34 Prospect st., Bklyn
Haskell, G. M., 4 *s*, 290 Washington st.
Hastings, C. F., 4 *s*, 15 W. 50
Hatton, H. C., 4 *m*, 251 McDonough st., Bklyn
Haussling, F. R., 1 *m*, 661 High st., Newark
Havard, E. W., sp *s*, 35 Hawthorne ave., East Orange
Haviland, R. F., 3 *m*, 336 W. 59
Havill, O. A., 1 *s*, 385 Grove st., Jersey City
Hawkins, S. O., 3 *s*, 61 Lefferts pl., Bklyn
Hawks, E. M., 2 *c*, 124 W. 53
Haydock, C. E., 1 *c*, 341 E. 50
Hayes, A., Jr., 3 *l*, 10 E. 43
Hayes, H. W. S., 1 *m*, Short Hills, N. J.
Hayt, R. A., 2 *m*, 52 W. 38
Hayt, R. O., 1 *s*
Hazen, T. E., *p*, 330 W. 57
Hazzard, H. C., 1 *l*, 321 W. 112
Hedges, G. B., 1 *l*, 262 W. 78
Heidelberg, M. G., 1 *s*, 9 W. 90
Heike, R. E., 3 *s*, 256 Montgomery st., Jersey City
Heimann, W. J., 1 *c*, Hotel Cecil, 118th st., St. Nicholas ave.
Heindel, N. S., 3 *l*, 240 Lenox ave.
Heineken, W. P., 2 *s*, New Brighton
Held, R. J., 4 *m*, 105 E. 18
Heller, B. S., 1 *l*, Graham House, Mad. ave., 89th st.
Hellman, G. S., 3 *c*, 200 W. 44
Henderson, A. M., sp *p*
Henderson, A. W., *ph*, 41 E. 69
Henderson, H. H., 3 *s*, 87 Locust Hill ave., Yonkers
Henderson, R. C., 1 *l*, 73 W. 94
Henline, C. D., 1 *l*, 115 W. 106
Hennessy, J. F., 1 *m*, West Chester
Henriquez, C. L., 2 *m*, 17 W. 87
Hensel, O, 2 *m*, 197 2d ave.
Herdman, H. H., Jr., *ph*, 126 Forsyth st.
Hermann, B. F. 1 *s*, 78 E. 79
Herrick, W. P., 4 *m*, 39 W. 54
Hervey, A. M., 1 *m*, 102 W. 64
Hess, A. F., 1 *m*, 956 Mad. ave.
Heuser, F. W. J., 1 *c*, 178 Lorimer st., Bklyn
Hewitt, E. S., 1 *s*
Hewlett, H. E., 4 *m*, Babylon
Heydt, C. E., 1 *l*, 301 W. 91
Hickey, G. F., 1 *l*, 52 Butler st., Bklyn
Hiester, A. V., *pl*, 520 W. 123
Hildburgh, L. W., grad. *s*, Park Ave. Hotel
Hildburgh, S. C., 1 *s*, Park ave. Hotel
Hildreth, L. T., 2 *l*, 31 E. 63
Hildreth, T. F., 1 *s*, 39 W. 25
Hill, B. F., *p*, 356 W. 120
Hill, G. P., 3 *l*, 31 E. 75
Hill, L., 1 *s*, 241 W. 52
Hill, R. F., Jr., 4 *s*, 31 E. 75
Hill, W. DeW., sp *m*, 64 Sands st., Bklyn
Hinck, O. H., 3 *c*, Montclair
Hinrichs, F. W., Jr., 3 *c*, 149 Congress st., Bklyn
Hinsdale, R. S., 4 *m*, 142 E. 48
Hitchcock, C. K., Jr., 2 *s*, 417 W. 117
Hoadley, C. W., 1 *s*, 11 W. 49
Hoadley, H., sp *c*, 347 W. 58
Hochlerner, T., 1 *s*, 205 Henry st.
Hodges, A. L., sp *ph*, 36 E. 12
Hodges, W. Van D., 2 *l*, 344 Manhattan ave.
Hodgson, E. H., 4 *s*, 417 W. 117
Hodgson, F. G., 1 *m*, 117 W. 64
Hoeninghaus, F. W., 2 *l*, 303 W. 72
Hoffman, I. M., 2 *c*, 30 S. 13th ave., Mt. Vernon
Hogan, G. H., *ph*, 41 E. 69
Hogan, R., 1 *c*, 313 W. 17
Holbrook, J. S., sp *s*, 128 W. 73
Holden, E., Jr., 3 *m*, 143 W. 64
Holden, L. H., *ph*, 624 High st., Newark
Holden, O. H., sp *p*, 66 Park ave.
Holland, F. J., 1 *l*, 165 W. 22
Holloway, J. M., 2 *c*, 83 Mad. ave.
Holmes, G. J., 2 *m*, 141 W. 64
Holmes, T. H., *p*, 160 W. 126
Holmes, W. S., 1 *m*, 351 W. 57
Holt, H., *pl*, 130 Fulton st.
Honnet, J. H., 3 *m*, 31 W. 58
Hooker, R. S., 2 *m*, 118 W. 64
Hoole, L. P., 2 *m*, 77a Monroe st., Bklyn
Hooper, H. N., Jr., 2 *s*, 320 W. 125
Hopkins, G. G., Jr., 3 *c*, 520 W. 123
Horowitz, J., 2 *m*, 123 E. 126
Horsford, F. C., 2 *m*, 58 Bank st.
Houston, H. E., *ph*, Vreeland and 20th aves., Paterson
How, R. W., Jr., 4 *s*, 207 W. 84
Howe, H. N., 3 *m*
Howe, J. P., 2 *c*, 135 E. 38
Howe, M. A., *p*
Hubbard, E. V., 4 *m*, 138 W. 74
Hubbard, G. C., Jr., 1 *s*, Tottenville

Hubbell, C. G., sp *m*
Hubby, F. W., Jr., 3 *l*, 30 W. 34
Hubschmitt, A. W., 2 *m*, 408 E. 52
Hudson, D. S., 3 *c*,
157 Franklin st., Astoria
Hudson, P. K., 3 *s*,
Hotel Marie Antoinette
Hudson, R. M., 1 *l*, 141 W. 64
Hughes, F. J., 3 *m*, 119 W. 61
Hughes, J. L., 3 *m*, 146 W. 33
Hulbert, C. S., 2 *s*, 109 W. 112
Hulick, F. R., 3 *l*, 160 Broadway
Hull, R. C., 2 *c*, 448 9th st., Bklyn
Hume, E. F., 1 *m*, 106 W. 61
Humiston, W. H., sp *ph*, East Orange
Humphreys, M., 2 *l*, 23 E. 47
Humpstone, O. P., 3 *m*,
291 Ryerson st., Bklyn
Hunt, C. F., 4 *m*, 139 W. 63
Hunt, F. L., 2 *l*, 58 Morningside pk.
Huse, R. S., 3 *l*, 417 W. 117
Hutchins, G. L., 4 *s*
Hutton, E. H., 2 *m*, 500 Mad. ave.
Hyams, B., 3 *m*, 1648 Mad. ave.
Hyde, H. St. J., *p*, 210 E. 18
Hyde, O. T., 1 *m*, 177 W. 63
Hynes, E. G., 2 *m*,
132 New York ave., Bklyn

Iglehart, E. T., 4 *c*,
211 Clermont ave., Bklyn
Imlach, W. B., 2 *s*, 309 West End ave.
Immediato, G., 2 *s*, 37 W. 124
Ingling, H. W., 3 *m*, 164 W. 64
Ireland, W. de F., 2 *m*,
487 Manhattan ave.
Irving, J. D., *p*, 371 W. 117
Irving, P. F., 2 *c*, New Brighton
Isaacs, L. M., 1 *l*, 110 E. 73
Iselin, E., 4 *c*, 9 E. 26
Iselin, J. H., 2 *l*, 32 E. 22
Israel, I., 2 *l*, 304 W. 115
Ivie, C. W., 4 *m*,
315 Hicks st., Bklyn

Jackson, E. S., 4 *m*, 47 E. 105
Jackson, F. H., Jr., 1 *m*
Jackson, J. G., 1 *c*, 146 W. 48
Jackson, J. M., 3 *m*, 19 E. 61
Jackson, R. H., 3 *m*, 329 W. 58
Jacobs, E., 1 *m*, 229 E. 57
Jacobs, R. K., 2 *l*, 116 E. 121
Jacobs, W. K., 3 *m*,
892 Union st., Bklyn
Jacobus, G. R., 4 *c*, Yonkers
Jacobus, T. I., sp *m*, 357 E. 50
Jacoby, L., 2 *m*, 426 E. 115
Jacocks, H. H., 1 *c*,
230 Central pk, S.
Jadwin, S. P., 1 *l*,
126 Gates ave., Bklyn
James, J. H., *p*,
1969 Amsterdam ave.
James, M. T., 2 *s*,
32 Monticello ave., Jersey City
Janeway, H. H., 4 *m*, 318 W. 57
Jarmulowsky, H., 2 *m*, 102 E. 60
Jedel, M., 2 *m*,
362 Warren st., Newark
Jelliffe, S. E., sp *m*, 231 W. 71
Jellinghaus, C. F., 1 *m*,
45 St. Mark's pl.
Jenks, E. P., 4 *m*, 106 W. 79
Jennings, J. E., 3 *m*,
403 1st st., Bklyn
Jeschke, H., *pl*, 41 E. 69
Jessup, W. C., 2 *s*, 144 W. 117
Johnson, A., *pl*, 491 Manhattan ave.
Johnson, B. G., sp *c*, 102 5th ave.
Johnson, E. W., 4 *m*
Johnson, F., Jr., 3 *l*, 174 W. 126
Johnson, J. B., 2 *c*, 238 W. 123
Johnson, P. Van K., 2 *m*, 318 W. 57
Johnston, H. S., 2 *l*, 37 E. 50
Johnston, S. C., *ph*
Jones, A. L., *ph*
Jones, A. L., 1 *s*, 236 5th ave.
Jones, F. M., 3 *m*, 417 W. 21
Jones, F. V., 2 *c*, 53 W. 51
Jones, J. M., 2 *m*,
81 Sip ave., Jersey City
Jones, M. D., 2 *m*, Far Rockaway
Jones, T. J., sp *pl*, 41 E. 69
Jones, W. B., 1 *m*, 415 W. 57
Jones, W. P., 4 *s*, 312 W. 28
Jordan, D., *ph*, 318 W. 57
Joseph, C., 3 *l*, 80 Beaver st.
Joseph, L., 1 *l*, 146 Clinton st.
Joseph, T. H., 4 *s*, 32 E. 74
Josephson, E., 2 *s*
131 Amity st., Bklyn
Josephson, W. S., 1 *c*,
131 Amity st., Bklyn
Josephthal, S. L., 3 *c*, 30 E. 62
Judd, J. R., 1 *m*, 317 W. 58
Judkowitz, H., 4 *m*, 164 Ridge st.
Judson, E., sp *pl*, 53 Washington sq.
Jung, A. N., 3 *s*, 2040 7th ave

Kafka, H., Jr., 1 *s*,
194 Edgecombe ave.
Kahn, S., 2 *m*, 406 E. 50
Kaine, L. F., 1 *m*, 1777 Mad. ave.
Kaiser, C. S., 1 *s*, 96 5th ave.
Kane, C. J., 3 *m*, 115 W. 63

Kaplan, B. M., *ph*, 736 Lex. ave.
Kaps, J. D., 3 *l*, 80 W. 105
Karns, W. A., sp *pl*, 129 W. 136
Kasner, E., *p*, 52 Catharine st.
Kaufmann, A., 2 *s*, 11 E. 66
Kebler, J. L., 2 *s*, 606 W. 114
Kellock, H. A., 2 *c*, 372 Manhattan ave.
Kellogg, F. F., 1 *s*, 48 W. 53
Kellogg, K. E., 4 *m*, 111 W. 75
Kellogg, W. G., sp *c*, 68 W. 39
Kelly, A. S., 2 *m*, 117 E. 59
Kelly, H. T., 4 *m*, 216 E. 70
Kelly, J. A., 3 *l*, 147 W. 57
Kemp, W. T., 1 *l*, 543 Manhattan ave.
Kennedy, G. F., 3 *l*, 21 Manhattan ave.
Kennedy, T. J. L., 2 *m*, 131 W. 77
Kenyon, J. H., 4 *m*, 127 W. 61
Keppel, D., 1 *s*, 239 E. 17
Keppel, F. P., 4 *c*, 239 E. 17
Keppler, C. R., 4 *m*, Elizabeth
Keppler, E. A. C., *ph*, 28 W. 70
Keresey, W. L., 1 *m*, 616 Hudson st., Hoboken
Kerr, J. C., 2 *l*, Englewood
Keschner, M., 3 *m*, 72 Pitt st.
Kessler, E. G., 4 *m*, 621 2d ave.
Kidde, F., 2 *c*, 66 Gates ave., Montclair
Kidder, S., 1 *c*, Ridgefield Pk., N. J.
Killgore, R. B., 2 *l*, 224 W. 139
King, P. J., 1 *m*, 247 E. 50
Kipp, B., 2 s, 20 W. 121
Kiralfy, H. B., 2 *l*, 38 W. Washington sq.
Kirby, G. T., 3 *l*, 158 W. 45
Kirkman, L. G., 2 *m*, 317 W. 56
Kittle, G. E., 1 *l*, 207 E. 126
Kline, W. L., 4 *m*, 34 W. 61
Klotz, W. C., 4 *m*, 42 E. 22
Knapp, J. R., 2 *c*, 62 W. 51
Kneeland, F. R., 3 *s*, 239 W. 74
Knight, F. H., 3 *m*, Y. M. C. A., W. 57th st.
Knight, H. B., 1 *s*, 547 W. 125
Knowles, F., 2 *m*, 209 W. 118
Knowles, R., 2 *l*
Knox, H. A., 2 *l*, 478 Mott ave.
Knudsen, A. S., 2 *m*, 349 W. 58
Kohn, A. H., 1 *c*, 334 W. 72
Kompfe, K. H., 1 *l*, 361 W. 117
Kopetzky, S. J., 4 *m*, 114 W. 111
Koronefsky, J., 2 *m*, 33 Pike st.
Koscherak, F. E., 2 *s*, 127 W. 82
Kosmak, G. W., 3 *m*, 23 E. 93
Krafft, H. F., 3 *l*, 354 W. 119
Kramer, D., 1 *m*, 324 W. 33
Kramer, L., 1 *m*, 324 W. 33
Krans, H. S., *ph*, 234 Central pk., W.
Krebs, M. H., 2 *m*, 226 Clinton st.
Kresel, I. J., 1 *l*, 1735 Mad. ave.
Kress, G. W. B., 1 *c*, 101 W. 93
Kretz, W. C., *p*, 149 W. 12
Kreuder, H., 4 *m*, 105 E. 73
Krickl, M., 2 *c*, 28 W. 125
Krug, E. F., 2 *m*, 320 W. 58
Krumb, H., 4 *s*, 55 Ten Eyck st., Bklyn
Kuntz, C, *ph*, 28 Gouverneur st.
Kurfiss, S. H., sp *s*, 12 Convent ave.
Kurrus, J., 3 *m*, 135 W. 64
Kurzman J. C., 1 *m*, 59 E. 82

Lacey, R. A., 2 *s*, 147 Amity st., Bklyn
Lambrecht, J. W., 1 *l*, 112 E. 95
Lampman, L. B., 2 *l*, 577 High st., Newark
Lamson, E. W., *pl*, 621 W. 152
Lamson, H. G., sp *c*
Landes, E. W., 2 *m*, 794 Parker st., Newark
Landman, J., sp *s*, 346 W. 48
Lang, E. J., 1 *s*, 38 W. 71
Lange, C. C. A., 4 *m*, 282 46th st., Bklyn
Lange, G. E., sp *pl*, 5 W. 124
Lansdowne, F. B., sp *m*
Lathrop, S. S., 2 *m*
Latourette, L. E., 2 *l*, 304 W. 115
Lawlor, J. F., 1 *s*, 349 W. 25
Lawrence, A. E., Jr., sp *p*, 2 W. 82
Lawrence, A. N., 1 *s*, New Brighton
Lawrence, G. A., *p*, 15 Central pk., W.
Lawrence, W. H., Jr., 3 *m*, 316 W. 70
Lawshe, J. E., 2 *l*, 61 W. 104
Lawson, L. M., Jr., 1 *m*, 15 E. 67
Lay, C. D., 1 *s*, 202 W. 103
Lay, W., *ph*, 224 W. 49
Layman, D. W., 4 *m*, 348 W. 56
Leale, L., 2 *c*, 604 Mad. ave.
Lebhar, N. J., 2 *m*
Le Count, L., 2 *s*, 225 W. 106
Lederer, A. M., 1 *c*, Ridgewood, N. J.
Lederman, E. D., 4 *m*, 128 E. 60
Ledwith, T. A., 1 *l*, 266 W. 72
Lee, A., 4 *c*, 361 W. 123
Lee, B. J., 4 *m*, 127 W. 64
Lee, H. M., 4 *m*, 128 W. 61
Lee, H. T., Jr., 4 *m*, 348 W. 56
Lee, J. T. A., 2 *l*, 235 E. 124
Lefferts, F. B., 1 *s*, 34 E. 65
Lehmacher, F., 1 *m*, 166 Springfield ave., Newark
Lehman, I., 3 *l*, 5 E. 62
Leiter, M. M., 2 *l*, 351 W. 114

Lemcke, E. G., 4 *c*,
103 Remsen st., L. I. City
Lemcke, G. R., 1 *c*,
103 Remsen st., Astoria
Leo, R. L., *ph*, 327 W. 84
Leonard, C. S., 3 *l*, 80 W. 105
Le Prince, J. A. A., 4 *s*, 622 W. 152
Le Prince, L. A. W., 1 *s*, 622 W. 152
Le Prince, L. F., 1 *s*,
170th st., Edgecombe road
Lese, F., 2 *l*, 231 E. 60
Lesem, W. W., 3 *c*, 18 E. 66
Leshure, J., 4 *m*, 243 W. 56
Lesinsky, L., 2 *c*, 13 E. 83
Leslie, A. M., 3 *l*, 2102 8th ave.
Leslie, A. von W., *ph*, 348 W. 57
Lesser, J. M., 2 *l*, 307 E. 55
Lesser, M. M., 3 *m*, 19 E. 61
Lessig, W. B., 2 *l*
Lester, M., 4 *c*, 69 1st pl., Bklyn
Letts, F. D., 1 *l*, 361 W. 123
Levine, A. J., 1 *s*, 340 W. 88
Levine, D., *ph*, 155 E. 52
Levine, E. J., 4 *s*, 340 W. 88
Levy, C., 1 *l*, 308 Alexander ave.
Levy, D., 1 *m*, 926 Columbus ave.
Levy, E., 2 *m*, 110 W. 78
Levy, I. H., 1 *m*, 208 Broome st.
Levy, W. L., 1 *l*, 200 W. 57
Lewine, J. L., 1 *l*, 813 Lex. ave.
Lewis, C. McK., 4 *s*, 104 E. 37
Lewis, J. H., 1 *m*, 326 W. 34
Lewis, M. H., 2 *s*, 25 E. 104
Leyenberger, S. B. W., 1 *m*,
98 3d ave., Newark
Libaire, E. W., sp *p*, 150 W. 49
Lichtenstein, H., 4 *s*, 14 W. 74
Lichtenstein, O. R., 3 *c*,
132 Amity st., Bklyn
Lighthipe, W. W., 4 *s*, 179 W. 10
Lilly, F. F., 2 *c*,
54 S. 7th ave., Mt. Vernon
Lindenmeyer, L., 1 *s*, 240 E. 15
Lindheim, G. W., 4 *m*,
945 Railroad ave.
Lindsay, L. S., 1 *s*,
St. Austin's, West New Brighton
Lindsay, W. G., 1 *s*, 69 W. 97
Line, A. M., 3 *m*, 147 W. 71
Linsley, J. H., sp *m*, 228 E. 19
Lippitt, W. M., sp *p*, 134 W. 91
Little, G. F., sp *m*,
469 Clinton ave., Bklyn
Livengood, H. R., 3 *m*,
1164 E. Jersey st., Elizabeth
Livingston, F. M., 3 *l*,
370 Greene ave., Bklyn
Livingston, J., Jr., 4 *s*, 56 E. 49
Livingston, L., Jr., sp *c*, Islip
Lloyd, F. E., *p*
Lobenstine, R. W., 2 *m*,
245 Central pk., W.
Lobo, G., 4 *s*, 219 W. 44
Locke, J. A., *ph*, 303 W. 84
Lockhart, L. S., 2 *l*, 218 W. 139
Lockward, L. G., 2 *s*, Caldwell, N. J.
Lockwood, F. T., 1 *s*, 527 W. 125
Lockwood, W. A., 2 *l*, 29 W. 56
Logan, J. C., 1 *l*, 323 W. 112
Logan, J. O., 4 *m* 61 E. 122
Logan, R. R., 1 *l*, 367 W. 116
Loizeaux, E. S., 1 *m*,
1 Brook ave., Plainfield
Loney, F. R., 1 *s*, 65 E. 64
Long, M. W., sp *pl*,
412 Lincoln st., Flushing
Long, P. C., 2 *l*,
74 Grove st., Plainfield
Long, T., 2 *l*, 261 W. 113
Long, W. H., Jr., 4 *m*
Longacre, O., Jr., 2 *s*, Spuyten Duyvil
Longfellow, A. H., 3 *l*, 47 W. 49
Loomis, A. G., 2 *l*
Loos, H. A., *p*, 119 E. 115
Loper, G. G., sp *pl*, 36 W. 58
Lopez-Guillén, J. M., 1 *m*, 32 W. 123
Lorenz, K. K., 1 *c*, 359 W. boulevard
Loughran, R. L., 3 *m*, 24 W. 50
Loughran, T. V., 3 *l*, 445 W. 47
Love, L. C., 2 *m*, Montclair
Love, L. H., 4 *m*
Low, J. T., Jr., 4 *m*, 111 W. 75
Low, W. G., Jr., 1 *l*,
58 Remsen st., Bklyn
Lowden, J. W., sp *ph*, 41 E. 69
Lowenberg, L., 4 *s*
Lowenstein, O., 2 *c*, 42 E. 74
Lowenstein, V., 3 *m*, 215 E. 79
Lowther, C. M., 4 *s*, 36 Riverside dr.
Lucas, G. L., 4 *s*, Kingsbridge
Ludlam, W. K., 1 *s*, 8 W. 16
Lum, R. F., 2 *c*, Chatham, N. J.
Lutz, F. A., 2 *l*, 529 W. 147
Lyall, H. J., 1 *l*, 367 W. 20
Lydecker, I. S., 4 *s*, 562 E. 155
Lyle, H. H. M., 2 *m*, 118 W. 64
Lyman, H. S., 3 *m*, 348 W. 56
Lynn, C. W., 3 *m*, 139 W. 96
Lyon, J. H., *ph*, 34 Park Row
Lyon, P. H., 4 *m*, 69 W. 93

McCabe, T. S., 1 *m*,
400 Market st., Newark
McCafferty, J. A., 3 *m*, 754 Park ave.
McCann, J. F., Jr., 2 *c*, 361 W. 123
McCarthy, E. J., 4 *m*, 147 W. 61
McCarthy, J. F., 1 *m*,
47 Linden st., Yonkers

McCastline, R., 3 *m*, 313 E. 57
McClelland, J. B., grad. *s*, 2 W. 47
McClelland, J. F., 2 *s*, 371 W. 117
McClure, W. J., 4 *s*, 259 W. 52
McComas, H. C., Jr., *pl*, 50 E. 70
McComb, W. H., 1 *m*,
125 Storm ave., Jersey Gity
McConkey, H. A., sp *ph*, 41 E. 69
McConn, H. J., 3 *l*, 25 W. 94
McCoy, F., Jr., 1 *l*, 205 W. 57
McCrea, R. C., *pl*, 2265 7th ave.
McCready, W. V., 1 *m*
McCulloch, R. A., 2 *s*, New Brighton
McCully, R. R., 1 *m*, 220 W. 24
McDonald, W., Jr., 3 *m*, 153 W. 61
McEntee, E. J., 1 *m*,
144 Union ave., Bklyn
McFarland, W. L., 2 *m*, 121 E. 35
McGill, E. L., 1 *m*, 117 W. 64
McGregor, R. G., *pl*, 41 E. 69
McIntyre, H. K., 3 *s*, 303 W. 74
McKeag, E. C., 1 *l*, New Brunswick
McKee, F. L., 3 *m*, 447 W. 57
McKee, T. H., 2 *l*, 47 W. 21
McKelvey, J. P., 1 *m*
McKenna, J. J., Jr., 2 *c*, 104 W. 116
McKenzie, E. T., 2 *m*, 116 W. 84
McKeon, J. G., 1 *m*,
343 Van Brunt st., Bklyn
McKeon, P. J., 1 *c*, 124 W. 47
McKim, A. R., grad. *s*, 106 E. 23
McLain, R. C., 2 *s*, 160 W. 59
McLaughlin, A. J., Jr., 2 *m*, 143 W. 61
McLaughlin, L. L., 3 *l*,
158 Waverley pl.
McLellan, H., 4 *s*, 108 E. 18
McLeod, H. C., 4 *m*,
429 Clinton ave., Bklyn
McLintock, A., 2 *s*, 149 W. 79
McWhood, L. B., *ph*,
136 Pennsylvania ave., Newark
McWhorter, J. E., 4 *m*, 127 W. 61
MacAlister, W. W., 3 *m*,
345 Van Houten st., Paterson
Macdougall, G. W., 2 *m*, 331 W. 57
MacGruer, H. A., 4 *m*, 30 W. 75
Machen, C. H., 3 *s*, 150 W. 82
Machen, H. B., 4 *s*, 150 W. 82
Macintosh, K., 1 *l*
MacKay, J. W., 1 *c*, 2055 Seventh ave.
Macklin, W. F., 4 *m*, 145 W. 76
Maclay, R., Jr., 1 *s*, 50 W. 75
Madan, J. A., 3 *s*, 75 E. 56
Magnus, B., 2 *s*, 22 E. 111
Magruder, H. S., 4 *s*, 133 W. 45
Maguire, E. O., 4 *m*, 145 W. 61
Mainzer, H. R., 2 *s*, 9 E. 66
Mandel, M., *ph*, 736 Lexington ave.
Mantinband, J., 2 *m*, 307 Henry st.
Mapes, C. M., 1 *s*, 717 Union ave.
Mapes, C. S., 1 *c*, 60 W. 40
Marcus, J., 3 *c*,
100 Danforth ave., Jersey City
Margulies, I., 2 *m*, 209 E. 114
Margulis, J., 2 *m*, 86 Suffolk st.
Marks, D., 1 *l*
Marsh, E. J., Jr., 2 *m*, 118 W. 64
Marshall, B. T., sp *pl*, 41 E. 69
Martin, H. W., sp *ph*, 29 E. 21
Martin, J. H. T., Jr., sp *l*,
Woodbridge, N. J.
Martin, J. S., Jr., 1 *s*, 260 Mad. ave.
Martin, T. A., 2 *m*, 436 Lenox ave.
Martin, U. F., 2 *m*, 447 W. 57
Mason, F., 4 *s*, 124 W. 65
Mason, H. C., 2 *l*, 2 W. 103
Mason, L. J., 2 *m*, 361 Mad. ave.
Mason, W., 1 *m*
Mathews, A. P., *p*, 27 Morningside ave.
Mathews, J. A., *p*, 4 First pl., Bklyn
Matthews, G., sp *c*,
509 Amsterdam ave.
Mattice, H. A., 1 *c*, West Chester
Maverick, W. C., sp *c*, 526 W. 123
Maxwell, W. H., Jr., 2 *c*,
682 Greene ave., Bklyn
Mead, D. I., 1 *l*, 309 W. 104
Mead, R. A., sp *m*, 316 W. 82
Meagher, J. F. W., 1 *m*,
35 Willow pl., Bklyn
Meehan, J. A., 1 *s*, 215 E. 61
Meeker, A. Y., 2 *c*, Glen Ridge
Meeks, R., 2 *s*, Hotel Endicott
Mehler, A. J., 2 *c*, 619 West End ave.
Mehrbach, W., 2 *s*, 56 E. 72
Meissner, W. C., 1 *s*, 48 W. 25
Mendel, E. M., 3 *m*
Menk, P. E., 2 *m*,
106 Market st., Newark
Menline, I., 4 *s*, 356 E. 69
Merchant, M. H., 1 *m*, 137 W. 61
Merrell, H. V., 4 *m*, 145 W. 61
Merriam, C. E., Jr., *pl*,
36 Morningside ave.
Merriman, J. D., 1 *l*, 46 W. 51
Mesick, F. S., 1 *c*, 47 E. 31
Meyer, A. S., 1 *c*, 136 W. 132
Meyer, C. G., sp *pl*, 137 W. 86
Meyer, L. B., 4 *m*, 2065 Mad. ave.
Meyer, R. B., 1 *c*, 58 W. 113
Michaelis, A., 4 *m*, 53 St. Mark's pl.
Miehling, R., 1 *s*, 350 W. 121
Milke, E. E., Jr., sp *p*,
82 Winfield ave., Jersey City
Miller, A. H., 4 *m*, 118 W. 63
Miller, C. G., sp *m*, 138 W. 65
Miller, C. W., 2 *l*, 353 W. 119
Miller, E. I., 3 *m*, 127 W. 67

Miller, E. W., 1 *m*,
301 York st., Jersey City
Miller, F. H., 2 *m*,
212 Hooper st., Bklyn
Miller, G. A., Jr., 1 *s*, Montclair
Miller, G. B., 4 *m*, New Rochelle
Miller, G. J., 1 *s*,
5 Middagh st., Bklyn
Miller, H. A., 3 *c*, 232 W. 45
Miller, J. A., 3 *m*, 137 W. 64
Miller, W. E., *pl*, 131 S. 8, Bklyn
Milligan, L. E., sp *ph*, 4 Hancock pl.
Mills, E. K., 2 *l*, Morristown
Mills, F. H., 1 *l*, 417 W. 117
Mills, H. J., 1 *s*, 1326 Dean st., Bklyn
Millspaugh, W. P., 2 *m*, 447 W. 57
Minard, H. C., 3 *l*, 280 W. 115
Miner, E. D., 1 *l*, 1150 Forest ave.
Mitchel, J. P., 3 *c*, 447 W. 162
Mitchell, E. B., 1 *c*, Flushing
Mitchell, H. B., 2 *c*,
164 Washington pk., Bklyn
Mitchell, H. B., 4 *s*, Flushing
Mitchell, J. F. B., Jr., 4 *c*, Flushing
Mitchell, R. J., 2 *m*,
911 West End ave.
Mitchell, W. E., 1 *s*, 326 W. 84
Mittendorf, W. E. K., 4 *m*,
140 Mad. ave.
Moffat, E. S., Jr., 1 *s*, 314 W. 113
Moffatt, M. R., 3 *c*, Mamaroneck
Moffett, S. E., sp *pl*, 351 W. 114
Mohr, C. A., sp *ph*, 41 E. 69
Monroe, P., sp *pl*
Montgomery, H. E., 2 *c*, 46 Cedar st.
Montgomery, W. C., 2 *m*, 5 W. 74
Mooney, F. X., 1 *l*, 493 Lex. ave.
Moore, C. C., 2 *m*, 76 Third pl., Bklyn
Moore, J. B., 1 *c*
Moore, W. U., 2 *c*, 203 W. 117
Moran, C., 3 *c*, 68 William st.
Moran, J. F., 1 *m*,
67 Forest st., Jersey City
Moran, W. E., 1 *s*, 1983 Mad. ave.
More, T., 2 *l*, 111 Broadway
Morey, A. T., 1 *l*, 280 W. 115
Morgan, B., 4 *m*, Glen Ridge
Morgan, G. W., 1 *l*, 242 W. 121
Morgan, W. M., sp *c*, 156 W. 79
Mork, S., 1 *l*, 348 E. 51
Morrill, W. C., 2 *s*, 24 W. 83
Morris, S. F., Jr., 3 *c*, 16 E. 30
Morrison, A. B., 1 *l*, 684 E. 143
Morrow, A. S., 4 *c*, 66 W. 40
Morrow, D. W., 2 *l*
Morse, G. W., 2 *m*, 345 W. 55
Morse, R. G., 1 *s*, 240 W. 121
Morse, R. K., 4 *c*
Mortimer, H. C., Jr., 3 *s*, 54 W. 21
Mortimer, L., 1 *c*, 54 W. 21
Morton, C. E., 1 *m*, 177 W. 63
Moschcowitz, E., 2 *m*, 364 W. 55
Moseley, H. P., 4 *m*, 318 W. 57
Mosenthal, H. O., 3 *c*, 16 W. 85
Mosenthal, W. J., 1 *c*, 16 W. 85
Moss, L. H., 3 *m*, 100 W. 77
Moulsdale, G. C., *p*, Rahway
Moulson, G. De W., sp *ph*, 147 E. 21
Moulton, R. H., 1 *s*, 51 W. 48
Moynan, W. T., 1 *m*,
134 Hooper st., Bklyn
Muirheid, J., 2 *c*, 322 W. 113
Mulcahy, T. A., 1 *m*, 401 W. 57
Müller, E. A., 4 *m*, 345 Pleasant ave.
Müller, J., 2 *s*, 418 W. 154
Mulligan, C. R., Jr., sp *c*,
Dover, N. J.
Mund, C., 2 *m*, 308 E. 62
Murphy, G. R., 3 *s*,
615 Charles st., West Hoboken
Murphy, H. A., 1 *s*, 57 Park ave.
Murphy, J. J., 1 *m*, 15 W. 58
Murphy, W. L., 1 *l*, 520 W. 123
Murray, H. C., 2 *l*, 67 W. 96
Murrin, J. B., 1 *m*, 143 W. 44
Murtha, E. I., 2 *l*, 241 W. 54
Myers, D. M., 1 *s*, 309 W. 70
Myers, S. S., 2 *l*, 334 E. 86
Myrick, F. W., 3 *m*, 129 W. 61

Nash, S. P., Jr., 1 *c*, 116 W. 55
Navoni, J., 2 *m*, 150 Sullivan st.
Neal, J. R., *pl*, 363 W. 117
Nellany, V. M., 1 *l*, 16 E. 56
Nelson, F. A., 2 *s*, 108 W. 84
Nelson, G. A., 2 *c*,
184 Vernon ave., Bklyn
Neresheimer, F. E., 3 *m*,
Bay Side, N. Y.
Nesbitt, R. H., 3 *m*, 121 W. 61
Nettleton, I. LaF., 3 *m*
Neu, S. S., 1 *s*, 101 E. 61
Neugroschl, A., 2 *c*, 119 E. 86
Newborg, L. D., 2 *c*, 33 E. 67
Newcomb, C. H., 1 *s*,
750 St. Mark's ave., Bklyn
Newgass, G. W., 2 *l*, 148 E. 61
Newman, E. S., Jr., sp *s*, 1699 B'way
Newman, M. L., 4 *s*, 107 E. 90
Newman, S. L., 1 *m*, 154 Mad. st.
Noble, R. E., 3 *m*, 356 W. 57
Nolan, T., sp *s*, 111 Fifth ave.
Noll, F. A., 1 *l*, 526 W. 123
Nolte, H., 4 *m*, 356 W. 57
Noonan, C. J., 2 *m*,
554 Henry st., Bklyn
Noonan, T. F., 1 *l*, 252 W. 25
Nordby, C. H., *ph*, 30 W. 132

Norman, M. W., 2 *c*, World Bldg
Norris, B. F., 1 *l*, 245 Lafayette ave., Bklyn
North, C. E., 2 *m*, 316 W. 57
North, F. R., *pl*, 318 W. 57
Noyes, C. E., 3 *s*, 879 7th ave.

Oakley, A. C., 2 *s*, 101 W. 72
Oakley, W. L., 1 *s*, 35 E. 64
Obermeier, L. J., 3 *l*, 220 E. 48
O'Brien, F. J., 3 *m*, 113 W. 64
O'Brien, T. E., 2 *c*, 247 Marcy ave., Bklyn
O'Connell, J. H., 4 *m*
O'Connor, C. G., 3 *m*, 400 Pacific st., Bklyn
O'Connor, E. F., Jr., 2 *c*, 428 Clermont ave., Bklyn
O'Connor, F. J., 2 *c*
O'Connor, J. H., 3 *m*, 316 W. 59
O'Connor, J. W., 3 *s*, 8 E. 12
O'Connor, W. A., 2 *s*, 12 E. 44
Oddie, H. H., 2 *s*, 59 W. 48
O'Donnell, W. T., 3 *l*, 362 W. 118
O'Dwyer, J., 2 *m*, 967 Lex. ave.
Ogden, C. J., 2 *c*, 250 W. 88
Ogilvie, J., 3 *m*, 129 W. 61
Olmstead, H. B., 1 *s*, 322 St. Nicholas ave.
Opp, A. W., 3 *l*, 181 Vernon ave., Bklyn
Oppenheimer, B. S., 1 *m*, 608 W. 114
Orgel, D. H., 2 *m*, 736 E. 9
Orner, G. D., 3 *s*, 202 W. 105
Osborn, T. D., sp *pl*, Sheepshead Bay
Osgood, A. T., 3 *m*, 264 W. 57
O'Shea, J. E., 1 *s*, 31 W. 88
Otto, C. L., 4 *s*, 885 Bushwick ave., Bklyn

Packard, R. G., Jr., sp *c*, 84 Columbia H'g'ts, Bklyn
Paddock, P., 3 *l*, 237 E. 104
Page, R. W., 1 *s*, 527 3d st., Bklyn
Pakelnisky, M., 2 *m*, 406 E. 50
Palmer, A. W., 1 *c*, 33d st., 5th ave.
Palmer, F., sp *ph*, 163 W. 73
Palmer, R. H., 1 *c*, 417 W. 117
Palmer, V. E., 2 *l*, 991 Amsterdam ave.
Pannaci, C. E. E., 2 *m*, 411 W. 57
Paret, W. P., 2 *l*, 161 W. 76
Parish, E. C., 3 *l*, 1 W. 19
Park, W., 2 *m*, 86 W. 103
Parker, A. W., Jr., 2 *s*, 68th st., 2d ave., Bklyn
Parker, G., 2 *c*, 68th st., 2d ave., Bklyn
Parker, L. R., 1 *s*, 345 State st., Bklyn
Parks, J. W., 4 *c*, 103 E. 21
Parr, F. Van S., 4 *c*, 111 Ross st., Bklyn
Parsons, G., 3 *c*, Hempstead
Parsons, I. D., 1 *s*, 344 W. 23
Parsons, T., 3 *c*, Hempstead
Pascual, W. V., 2 *m*, 263 Stuyvesant ave., Bklyn
Pattberg, O. F., 4 *s*, 74 Sherman pl., Jersey City Heights
Patterson, H. S., 2 *m*, 19 E. 45
Paulmier, F. C., *p*, Madison
Payne, W. A., 3 *m*, 415 W. 57
Peabody, J. E., *p*, University Heights
Pearson, C. E., 2 *m*, New Brighton
Pearson, J. M., 1 *m*, 322 E. 27
Pease, H. H., 3 *l*, 56 W. 52
Peck, T. B., Jr., 4 *s*, 111 E. 34
Pedersen, V. C., 4 *m*, 124 W. 65
Pegram, R. B., 1 *c*, 129 E. 40
Pelgram, G. O., 2 *m*, 337 W. 88
Pell, J. D., 3 *c*, 13 E. 29
Pelton, H. H., 4 *m*, 124 W. 65
Pendleton, J. P., 4 *m*, 145 W. 61
Pentz, J. W., sp *ph*, 105 W. 113
Perkins, H. A., 3 *s*, 202 W. 103
Perrin, E. N., *ph*, 111 W. 124
Perry, F. P., 1 *m*, 352 W. 56
Perry, W. V., 2 *l*, 367 W. 117
Petty, N. O., 2 *l*, 216 W. 22
Pfeiffer, C. H., 2 *s*, 171 W. 73
Phelan, J. J., 2 *l*, 66 W. 85
Phelan, J. M., 1 *m*, 102 39th st., Bklyn
Phillips, H. M., 2 *l*, 228 Mad. st.
Phillips, J. F., 1 *s*, 219 E. 34
Pier, V. S., 1 *m*, 238 W. 11
Pierce, E. F., 1 *m*
Pierrepont, R. L., 3 *c*, 29 E. 28
Pierson, F. H., Jr., 3 *m*, 1129 E. Jersey st., Elizabeth
Pinchot, A. R. E., 1 *l*, 2 Gramercy pk.
Pindar, F. S., 2 *m*, 318 W. 57
Pinkney, C. S., 1 *s*, 716 Mad. st.
Pinneo, F. W., 1 *m*, 301 Lex. ave.
Pitt, R., 2 *s*, New Rochelle
Pittman, J. G., 2 *m*, 108 W. 89
Planten, W. R. J., 2 *l*, 44 Eighth ave., Bklyn
Platt, M. C., 1 *l*, 306 W. 139
Platt, S. B., 1 *c*, Bay Shore
Platz, J. M., 1 *l*, 252 W. 128
Plonsky, S. E., 2 *s*, 50 W. 88
Plotz, I. I., 2 *m*, 48 Rivington st.
Pobe, G. O., 1 *m*, 317 W. 56
Poillon, H. A., 1 *s*, 125 E. 70
Polatsak, H. B., 2 *m*, 149 Ave B.
Pollak, F. D., 2 *l*, 210 W. 139
Pollard, C. W., 3 *m*, 159 Mad. ave.

Pollard, D. H., 2 *c*
Pomeroy, R. B., 4 *c*,
Pond, A., Jr., 1 *m*
Pool, E. H., 3 *m*, 137 W. 64
Pope, F. J., *p*, 356 W. 120
Pope, J. E., *pl*, 12 Convent ave.
Popper, W., *ph*, 260 W. 93
Porter, E. P., 2 *m*, 415 W. 57
Potter, P. A., 3 *m*, 111 W. 87
Potter, R. K., 1 *s*, 50 W. 48
Powell, I. A., sp *pl*, 12 W. 40
Powell, W. R., 1 *s*, 242 W. 121
Powers, E. B., 1 *m*,
Pratt, W. H., 2 *l*, 304 W. 115
Prendergast, J. W., Jr., 3 *l*,
125 Amity st., Bklyn
Prentice, A. C., 1 *m*
Prentice, J. H., grad. *s*, 29 E. 28
Preston, P. B., 1 *m*,
218 Walnut st., Newark
Pretzfeld, C. J., 4 *c*,
Graham House, 89th st., Mad. ave.
Priddy, J. E., 2 *l*,
90 Pierrepont st., Bklyn
Prince, H. S., 1 *c*,
868 Flatbush ave., Bklyn
Pringle, E. G., 1 *l*, 155 W. 130
Probasco, E. B., 4 *m*, 145 W. 61
Probasco, N. H., 4 *m*, 318 W. 57
Proctor, D. G., 1 *c*, 307 W. 82
Proskauer, J. M., 2 *l*, 116 W. 136
Prout, G. P., 1 *s*, Nutley
Pulsifer, T. C., 3 *m*, 415 W. 57
Putnam, A. W., 1 *l*, 16 W. 77
Pyle, F. W., 1 *m*, 243 W. 56
Pyle, I., 4 *m*,
108½ Clinton ave., Jersey City

Quackenbos, G. P., 2 *c*, 331 W. 28
Quel, B., 2 *m*, 43 Canal st.
Quinby, W. O'G., 2 *m*,
80 Columbia st., Newark
Quinn, W. R., 1 *c*,
659 10th st., Bklyn

Rabinovitz, M., 2 *m*, 11 Eldridge st.
Rae, J. G., 1 *s*, 953 Home st.
Radau, H., *ph*, 175 9th ave.
Raiman, R. I., 1 *c*,
704 Quincy st., Bklyn
Raisman, A. I., 4 *s*,
50 Wallace st., Newark
Rambaud, G. G., 3 *m*, 1 W. 97
Ramsay, A. L., 2 *l*, 306 W. 104
Randall, H. T., 4 *c*,
10 Girard ave., East Orange
Randolph, C. F., *ph*, 607 W. 138
Randolph, F. P., 1 *l*, 51 E. 29
Randolph, L., 4 *c*,
Mt. St. Vincent, N. Y.
Ratzell, J. P., *pl*, 41 E. 69
Rauscher, J. C., sp *pl*, 41 E. 69
Ray, D. H., 1 *s*, 416 W. 55
Raymond, E. H., Jr., 2 *c*, Summit
Raymond, F. N., *ph*, 55 W. 117
Raymond, M., 4 *s*, 166 Henry st.
Read, C. P., 1 *s*, 75 E. 54
Redden, W. A., 2 *l*, 362 W. 118
Reed, A. G., *ph*, 363 W. 117
Reed, R. F., sp *ph*, 41 E. 69
Reich, S., *ph*, 239 E. 104
Reichers, G. H., 2 *m*
Reiley, R. J., 1 *s*, 145 E. 34
Reilly, F. P., 1 *l*, 78 W. 105
Reilly, J. A., 2 *s*, 349 E. 42
Reinhardt, E., 1 *m*, 243 7th st.
Reinsberg, C. H., 2 *m*, 34 Varick st.
Reisman, S. C., 1 *m*, 56 Broome st.
Reiss, H., 2 *m*, 301 8th st.
Remy, A. F. J., *ph*, 370 W. 118
Reyna, J. E., 4 *s*,
The Elmer, Morningside ave.
Reynolds, G., 1 *m*, 337 W. 57
Reynolds, H. B., 2 *m*, 166 W. 126
Reynolds, J. E., 2 *l*, 166 W. 126
Reynolds, J. L., 1 *m*
Reynolds, M. T., 1 *m*, 558 7th ave.
Rich, J. M., sp *p*, 50 W. 38
Rich, W. H., 1 *c*, 15 W. 69
Richardson, R., 1 *l*,
45 Percy st., Flushing
Rider, C. C., 2 *c*, 526 W. 123
Ridgway, W. C., 3 *l*,
687 West End ave.
Riggio, L. D., 1 *m*, 79 E. 114
Riker, J. L., II., 2 *l*, 27 E. 69
Riley, M., 1 *l*, 227 W. 12
Ring, E. G., sp *m*, 967 Park ave.
Ringer, P. H., 1 *c*, 64 W. 53
Rionda, J. B., 1 *s*, 141 W. 93
Rionda, M. E., 2 *s*, 141 W. 93
Ripley, W. H., 3 *s*, 605 Lex. ave.
Rising, H. R., 1 *s*,
20 Summit st., Newark
Riter, L. E., Jr., 3 *s*, 314 W. 115
Roach, W. MacP., 1 *l*, 607 W. 113
Robb, W. M., 1 *m*,
Amsterdam, N. Y.
Robbins, W. H., 1 *l*
Roberts, C. C., 3 *l*,
Hotel Marie Antoinette
Roberts, D. DeV., 4 *m*,
372 Clinton ave., Newark
Roberts, E. J., 1 *c*, 256 W. 71
Roberts, G., 4 *c*, 14 W. 90
Robinson, E. P., 1 *m*
Robinson, F. A., 1 *s*, 123 W. 76

Robinson, J. A., sp *m*, 310 W. 46
Robinson, J., Jr., 4 *m*, 134 W. 61
Robinson, R. M., 1 *l*, 604 W. 114
Roca y Casusa, C., 1 *m*, 158 W. 119
Rochester, H., 2 *c*, 306 W. 115
Roelker, A., Jr., 3 *l*, 202 W. 45
Roell, A. J., 1 *s*, 1059 2d ave.
Roemer, W. B., 3 *m*, 140 E. 49
Roff, A. W., 4 *m*,
603 Orange st., Newark
Rogers, A., 1 *m*, 411 W. 57
Rogers, A. P., 3 *s*, 305 W. 55
Rogers, E. W., 2 *s*,
372 Manhattan ave.
Rogers, J. J., 1 *m*, 316 W. 57
Roll, J. K., 1 *l*, 147 E. 92
Roller, H. C., sp *p*, Cranford, N. J.
Rollins, F., sp *ph*, 356 W. 145
Roos, L. L., 2 *m*, 209 E. 68
Ropes, E. C., 3 *c*, 74 Wall st.
Ros, J. P., 3 *s*, 109 W. 48
Rosenbaum, S., 1 *l*, 247 E. 51
Rosenberg, D. D., 2 *c*, 304 W. 115
Rosenberg, E. A., 4 *m*, 240 E. 30
Rosenberg, J. N., 3 *l*, 230 W. 78
Rosenberg, M., 3 *m*, 240 E. 30
Rosensohn, W., 2 *m*, 49 Eldridge st.
Rosenthal, C. M., 1 *l*, 344 E. 50
Rosenthal, E., 1 *m*, 529 W. 152
Rosenwasser, C. A., 3 *m*,
248 Littleton ave., Newark
Rosett, L. J., 2 *l*, 1676 Ave. A
Ross, H. W., 1 *s*, 2006 5th ave.
Ross, N. O., 2 *l*, 125 W. 21
Rossi, L. M., 2 *s*, 134 W. 83
Rothe, H. E., Jr., 1 *m*,
194 Washington ave., Newark
Rothwell, T. A., o. c. *m*, 112 W. 116
Rowe, A. C., 3 *l*,
550 Washington ave., Bklyn
Rowe, J. C., 3 *l*, 243 W. 123
Rowe, N. L., Jr., 2 *m*,
647 Jersey ave., Jersey City
Roy, H. F., 1 *l*,
The Norwood, 126th st., 7th ave.
Roys, C. K., 1 *m*, 141 W. 63
Rubenstein, C. A., *ph*,
1294 Columbus ave.
Rubenstein, G., 3 *l*, 112 E. 80
Ruhl, H. C., 4 *m*, 520 Lowell st.
Rumsey, D., 2 *l*, 200 W. 56
Rundquist, E. A., 4 *m*,
St. Luke's Hosp'l
Runge, A., 2 *s*, Flushing
Rupp, A., *ph*, 225 E. 19
Ruppert, G. E., 2 *l*, 1116 5th ave.
Russell, J. I., 1 *m*
Russell, T. G., 3 *m*, 101 W. 73
Russell, W. M., sp *m*, 366 Jay st., Bklyn
Rutz, A. A., 3 *m*, 166 7th ave., Bklyn
Ryan, P. F. X., 1 *m*, 111 E. 75
Ryder, G. H., 3 *m*, 318 W. 57
Ryker, H., 2 *s*, 19 W. 123

Sabel, S. O., 4 *m*, 217 E. 68
Sabine, P. S., 4 *m*, 960 Mad. ave.
Sage, D., 1 *s*, 23 W. 50
St. Clair, H. H., Jr., 2 *c*, 347 W. 123
St. George, A. H., 1 *c*, 30 W. 132
Salant, W., 3 *m*, 348 E. 78
Sandt, J. H., *ph*, 41 E. 69
Sandy, W. C., Jr., 4 *c*,
262 N. 6th st., Newark
Sanford, H. G., 3 *l*, 135 Mad. ave.
Sanger, E. L., 1 *s*, 163 W. 78
Satterlee, E. L., 2 *s*, 60 E. 78
Satterlee, G. R., 4 *m*, 60 E. 78
Satterlee, H. S., 2 *m*, 8 W. 18
Saunders, G. C., 3 *s*, 513 W. 142
Saunders, N. B., 2 *m*, 139 W. 61
Saxe, G. A., 4 *m*, 178 E. 78
Saxe, J. G., 1 *l*, 18 W. 93
Scarlett, A. E., 1 *c*,
350 S. 4th ave., Mt. Vernon
Schaeffer, B. L., 1 *m*, 208 E. B'way
Schafer, A. S., 2 *c*, 52 W. 46
Schaff, A. E., sp *pl*, 15 E. 43
Schafran, L., 3 *l*, 1644 Mad. ave.
Schanck, W. H., 1 *s*, 101 W. 73
Schaper, W. A., *pl*,
280 St. Nicholas ave.
Scharf, H. W., 1 *s*, 171 W. 133
Schenck, G. K. W., 1 *m*,
Canarsie, N. Y.
Scherr, E. W., Jr., *p*, 2067 7th ave.
Scherrer, J. A., 1 *s*, 404 W. 124
Schildecker, C. B., 1 *m*
Schimper, F. J. von M., 1 *s*,
371 W. 117
Schlegel, J. W., 1 *s*, 602 E. 5
Schlesinger, F., *p*
Schley, J. M., Jr., 3 *c*, 628 5th ave.
Schlussel, J. S., 4 *c*, 37 W. 74
Schlussel, W. S., 2 *c*, 37 W. 74
Schmidt, C. G. A., 1 s, 54 New st.
Schnecker, W. A. M., 3 *m*, 235 E. 52
Schneidenbach, A. J., 1 *m*, 105 E. 75
Schneider, F. A., 1 *m*, 165 W. 64
Schneider, J. P., *ph*, 1046 E. 165
Schroeder, D. H., *ph*, 41 E. 69
Schroeder, H., 3 *s*, 137 Mad. ave.
Schulhofer, S., 1 *m*, 338 E. 120
Schulte, E. D. N., 3 *s*, 47 W. 25
Schulte, H. von W., 1 *m*, 47 W. 25
Schultz, A. P., 1 *m*, 288 Broome st.
Schulz, H., 1 *m*,
38 Franklin st., Newark
Schurz, H., 1 *l*, 16 E. 64

Schuyler, M., Jr., 3 *c*, 1025 Park ave.
Schwartz, H. W., 1 *m*,
189 Midland ave., Bloomfield
Schwarz, A. H., 4 *c*, 105 E. 79
Schwarz, C. C. F., sp *pl*, 175 W. 79
Schwarz, H., 4 *m*, 223 E. 76
Schwarz, J. A., 1 *l*, 148 W. 117
Schweitzer, H., 1 *m*, 366 9th ave.
Schwerin, C. M., 1 *s*, 324 W. 113
Schwersenski, A. L., 1 *l*, 2018 5th ave.
Scofield, C. E., 3 *m*,
152 Taylor st., Bklyn
Scoggan, E. B., *ph*, 202 W. 105
Scudder, H., Jr., 3 *s*, 21 E. 22
Scully, D. J., Jr., 3 *m*,
165 Penn st., Bklyn
Sears, S. F., *ph*, 520 W. 123
Seelig, M. G., 2 *m*, 143 W. 61
Seguine, E. M., 2 *c*, Rosebank, N. Y.
Selleck, E. E., 1 *m*, 243 W. 56
Senftner, A. D., 1 *c*, 108 W. 136
Senftner, A. E., 3 *c*, 108 W. 136
Serrano, V., 1 *s*
Sessinghaus, G., 4 *s*, 143 W. 43
Severino, J. M., 3 *m*, Astoria
Seward, F. K., 3 *c*, 113 W. 85
Seward, G. O., 2 *s*,
48 Hawthorne ave., East Orange
Seymour, C. M., 1 *l*, 258 W. 121
Shanahan, R. H., 2 *m*,
148 Washington st., Tarrytown
Shangle, M. A., 2 *m*, Roselle
Sharp, J. C., 1 *m*, 373 12th st., Bklyn
Shattuck, E. P., sp *l*, 326 W. 32
Shaw, C. F., 1 *l*, 10 1st pl., Bklyn
Shearer, L. H., 1 *m*, 117 E. 54
Shearman, T. G., Jr., 1 *l*, Paterson
Shearman, R. W., 1 *m*,
398 Van Pelt st., L. I. City
Shepard, W. A., 1 *c*, 102 W. 75
Sheppard, J. J., *pl*, 60 W. 13
Sherer, P. A., 3 *c*, Hempstead
Shields, J. A., 4 *m*,
125 Ainslie st., Bklyn
Shipley, A. E., 3 *m*,
239 Keap st., Bklyn
Shipman, C. S., 1 *m*, 1 W. 128
Shirrifs, R. A., 3 *m*,
571 Mad. ave., Elizabeth
Shoemaker, H. W., sp *c*, 22 E. 46
Shrier, A. F., 3 *m*, 128 Ave. C
Sicard, M. H., 4 *m*, 127 W. 61
Siegel, H. L., 2 *c*, 314 W. 115
Siegman, R., sp *m*, 7 E. 46
Silbiger, S., 1 *c*, 64 E. 120
Simon, T. W., 3 *m*, Kingsbridge
Simons, F. C., sp *c*, 13 W. 120
Simonson, L. M., 3 *s*, 293 Lenox ave.
Simpson, R. G., 3 *c*, Plainfield
Simpson, W. T., 2 *s*, 208 W. 134
Sinclair, U. B., Jr., sp *ph*, 130 W. 91
Singerman, S. A., 3 *l*, 344 W. 48
Sites, C. M. L., *pl*, 264 W. 127
Slade, H. S., 2 *c*,
95 Woodworth ave., Yonkers
Slaven, R. E., 3 *s*, 119 W. 72
Sloan, T. G., 3 *m*, 447 W. 57
Sloane, T. O'C., Jr., 1 *s*, South Orange
Slocum, H. B., 1 *m*,
158 Walnut st., Montclair
Small, H. F., 1 *c*, 54 W. 85
Smith, A. G., 2 *c*, 95 Grand st., Bklyn
Smith, B., 2 *s*, 144 W. 73
Smith, B. W., 2 *s*, 553 W. 156
Smith, C. C., 1 *l*
Smith, C. E., sp *p*, 128 W. 102
Smith, C. H., 1 *m*
Smith, C. H., 1 *s*, 1293 Mad. ave.
Smith, C. W., 1 *s*, 150 5th ave.
Smith, D. H., 3 *c*, 15 E. 38
Smith, F. G., 1 *s*, New Rochelle
Smith, F. W., 2 *m*, 415 W. 46
Smith, G. B., *ph*, 46 W. 64
Smith, H. V. A., 2 *m*,
102 Palisade ave., Jersey City
Smith, J. A., 3 *m*, 353 W. 58
Smith, J. B., Jr., 1 *c*,
299 Alexander ave.
Smith, J. P., 3 *l*, 355 W. 17
Smith, L., 4 *m*, 216 W. 70
Smith, L. B., Jr., 1 *s*, 553 W. 156
Smith, P., 2 *m*, 534 W. 45
Smith, W. A., Jr., 4 *s*, 102 E. 57
Snyder, J. H., 2 *l*, West Hoboken
Solley, J. B., Jr., 4 *m*, 319 W. 101
Solomon, J. B., 4 *c*, 25 King st.
Solomon, M., 2 *l*, 11 Attorney st.
Solomon, N. C., 2 *s*, 344 W. 145
Sommerich, O. C., 2 *l*, 175 E. 79
Son, C. A., 1 *l*, 417 W. 117
Soper, E. B., Jr., 2 *l*
Soper, E. H., 2 *l*
Soper, G. A., *p*, 63 W. 96
Southack, J. W., 1 *c*, 401 B'way
Spalding, A. B., 2 *m*, 111 W. 68
Spaulding, E. G., *ph*, 20 E. 50
Spencer, F. H., 3 *m*, 139 W. 61
Spencer, G. W., sp *m*,
Bedford ave., S. 5th st., Bklyn
Spiegel, L., 1 *m*, 317 E. 30
Spiegel, M. J., 1 *l*, 346 W. 121
Spiegelberg, E. E., 1 *l*, 156 W. 44
Spiller, R. L., 2 *s*, Hotel San Remo
Spingarn, A., 1 *m*, 31 Division st.
Spingarn, A. B., 1 *l*, 118 E. 58
Spingarn, J. E., *ph*, 118 E. 58
Spiro, W., 1 *c*, 21 W. 95
Sporborg, W. D., 3 *l*, 111 E. 65

Squire, A. O., 3 *m*, 43 W. 60
Staab, J., 2 *l*, 526 W. 123
Stagg, F. M., 4 *m*,
94 N. Main st., Paterson
Stanley, W. P., sp *ph*
Stark, M., 1 *m*, 433 E. 57
Stark, M. M., 3 *m*, 87 Baxter st.
Stark, N., 1 *m*, 257 2d st.
Starr, R. H. E., 1 *l*, 314 W. 113
Starr, R. S., 1 *m*, 140 W. 70
Stateler, J. H., sp *p*, 312 W. 106
Staunton, H. C., 3 *c*, 145 W. 46
Steedly, B. B., 1 *m*, 104 W. 89
Stein, M., 2 *l*, 254 E. 112
Steinbach, G. E., 1 *s*, 52 Barclay st.
Steinberger, J. S., 1 *m*, 153 E. 61
Stephens, J. W., *ph*, 314 E. 35
Stern, A. R., 3 *m*, 55 W. 50
Stern, B. H., 3 *l*, 133 E. 80
Stern, H. L., 2 *l*, 346 W. 121
Stern, M., 2 *m*, 54 W. 104
Stern, N., 4 *c*, 448 W. 43
Stern, R. H., 4 *c*, 252 W. 131
Stern, S. W., 1 *l*, 101 E. 81
Stetten, De W., 1 *m*, 53 W. 133
Steven, F. R., 2 *s*,
264 Hicks st., Bklyn
Stevens, T. F., 2 *c*, 29 E. 28
Stevenson, M., 1 *c*, 10 W. 43
Stevenson, R., 3 *m*, New Bridge, N. J.
Stewart, A. C., sp *ph*, 41 E. 69
Stewart, F. G., sp *s*, 27 E. 38
Stewart, J. B., 1 *s*, 1390 Wash. ave.
Stewart, J. F., 2 *m*,
Cold Spring Harbor
Stewart, W. A. W., 1 *l*, 27 E. 38
Stiger, W. D., 1 *l*, 319 W. 74
Stillwell, A. G., 4 *s*,
164 St. John pl., Bklyn
Stock, H. M., 4 *m*, 18 W. 61
Stockwell, F. E., *ph*, 41 E. 69
Stoddart, C. W., 2 *c*,
13 Ludlow st., Yonkers
Stoeckius, A., *ph*, 316 E. 66
Stone, H. F., 3 *l*, 417 W. 117
Stone, N. I., *pl*, 372 W. 120
Stone, S. W., 3 *m*, 351 W. 27
Stradling, F., 2 *m*, 447 W. 57
Strassburger, W. J., 1 *s*, 524 W. 123
Stratford, T. A., 3 *s*,
134 Berkeley pl., Bklyn
Strauss, I., 4 *m*, 32 W. 120
Strauss, L., 2 *s*, 237 E. 12
Strauss, M. L., 1 *l*, College Point
Streeter, G. L., 3 *m*, 153 W. 61
Stripe, F. E., 1 *l*, 202 W. 103
Stromeyer, W. T., 1 *s*,
1008 Trinity ave.
Strong, S. M., 1 *m*, New Rochelle
Strunsky, S., 2 *c*, 227 Clinton st.
Stryker, E. de M., 1 *m*
Stuchell, W. T., *pl*, 41 E. 69
Sturges, R. A., 3 *l*, 61 W. 51
Sturm, M. A., 1 *m*, 237 E. B'way
Summersgill, H. T., 1 *m*, 352 W. 55
Sumner, F. B., *p*, 17 W. 31
Sutphen, E. B., 1 *m*,
999 Broad st., Newark
Sutro, H. H., 4 *s*, 60 W. 49
Sutton, E. F. H., 3 *m*, Audubon pk.
Swanick, J. R., 4 *m*, 34 W. 61
Swart, H. A., 1 *s*, Mt. Vernon
Sweeney, G. A., sp *m*, 438 W. 57
Symmes, W. B., Jr., 4 *c*,
Hotel Winthrop, 7th ave., 125th st.

Tamblyn, W. T. F., *ph*, 601 Lex. ave.
Tannenbaum, S. A., 4 *m*,
353 E. Houston st.
Tanner, E. P., *pl*, Paterson
Tarler, G. C., 2 *l*, 69 W. 89
Tatlock, J. L., 4 *s*, Pelham Manor
Taylor, B. I., 2 *l*, Rye
Taylor, J. M., 4 *m*, 128 W. 61
Taylor, J. P., *ph*, 374 W. 116
Teahan, W. J., 1 *m*, 129 W. 64
Tegen, F. H., 2 *l*, Clinton pl., Newark
Telfair, J. H., Jr., 1 *m*,
Port Richmond
Temple, T. R., sp *ph*, 128 W. 90
Tenney, A. A., 4 *c*,
151 Hewes st., Bklyn
ter Meer, H. C., 1 *s*,
1228 Garden st., Hoboken
Thayer, R. H., 1 *s*,
75 Hawthorne ave., Yonkers
Theall, E., Jr., 1 *l*,
108 Montague st., Bklyn
Thomas, H., 2 *l*, 520 W. 123
Thomas, W. S., 4 *s*, 417 W. 117
Thompson, E. C., 1 *m*, 165 W. 64
Thompson, J. L., 3 *l*, 330 W. 86
Thompson, M. R., 1 *s*, 110 E. 46
Thomson, W. D., 1 *l*
Thorndike, E. L., *ph*, 159 W. 108
Thorne, J. T., *ph*,
2132a Fulton st., Bklyn
Thorne, V. C., 2 *l*, 677 West End ave.
Thorner, M., 4 *m*, 121 W. 61
Thurston, L. S., 1 *s*, 71 Barclay st.
Tibbals, R. G., 4 *s*,
148 Milton St., Bklyn
Tiebout, C. H., Jr., *pl*,
112 Prospect pk., W., Bklyn
Tiemann, H. P., 2 *s*, 522 W. 123
Tierney, M. J., 3 *m*, 271 W. 73
Tillotson, J. B., 1 *l*, 314 W. 85
Tillotson, W. L., 1 *l*

Tilt, B. B., 3 *s*, 5 E. 67
Titcomb, H. A., 4 *s*
Todd, G. W., 1 *m*, 201 W. 13
Todd, L. A., 2 *m*, 111 W. 68
Toering, A. J., 2 *m*,
54 Nelson pl., Newark
Tombo, R., Jr., *ph*,
2 Ridge pl., Mott Haven
Tomlinson, R. D., 2 *m*,
212 La Grande ave., Plainfield
Tompkins, F. E., 3 *m*, 261 W. 16
Torek, F., sp *m*, 699 Mad. ave.
Torossian, B. R., sp *ph*, 41 E. 69
Tousey, R., 4 *m*, 151 W. 76
Trapote, R., 4 *s*, 130 W. 29
Trenchard-Wood, A., 3 *m*, 111 W. 74
Trudeau, E. L., Jr., 2 *m*, 118 W. 64
Tucker, J. W. S., 1 *l*,
543 Manhattan ave.
Tudor, W., Jr., 4 *s*, 240 W. 121
Turner, L. A., 4 *m*,
256 Hancock st., Bklyn
Turner, W. S., 2 *c*, 105 E. 83
Turnure, P. R., 4 *m*, 417 5th ave.
Tuttle, C. H., 3 *c*, 46 W. 85
Tuttle, W. R., sp *pl*,
280 St. Nicholas ave.
Tweedy, J.B., 1 *s*, 353 Western boul'd
Tyler, A. C., sp *s*, 220 W. 128
Tyler, W. S., 2 *l*, 146 B'way

Uhl, C. M., 2 *m*, 1 W. 72
Uhle, C. R., 1 *m*, 507 W. 144
Ulke, D., 1 *s*, 777 Lex. ave.
Ullman, A. E., 3 *m*, 253 W. 104
Underhill, A. D., 1 *s*,
18 Overlook terrace, Yonkers
Underhill, J. G., *ph*,
97 Lafayette ave., Bklyn
Updegraff, H., *ph*, 361 W. 123

Vail, N. F., *ph*, 127 E. 52
Valentine, M. C., 2 *m*, 259 W. 131
Van Alstyne, W. B., 1 *m*,
28 Manhattan ave.
Van Cise, W. M., 1 *c*, Summit, N. J.
Van Deerlin, R. W., 2 *s*,
66 Charles st.
Vandegrift, G. W., 1 *m*, 880 Lex. ave.
Van Der Clock, C., 2 *m*,
54 Mercer st., Paterson
Vanderveer, G. F., 2 *l*, 321 W. 112
Van Doren, G. B., 2 *m*, 118 W. 69
Van Horne, J. R., 1 *s*,
70 Summit ave., Jersey City
Van Ingen, P., 1 *m*, 9 E. 71
Van Kleeck, M. J., 1 *l*, 306 W. 104
Van Name, W. M., 3 *c*, Tottenville
Van Patten, P. S., 4 *m*, 24 W. 60
Van Voorhis, B. W., 2nd, 4 *s*,
West Brighton
Van Vranken, A. B., 2 *m*,
152 S. 9th st., Bklyn
Van Wagenen, H., Jr., 2 *s*, 36 E. 53
Van Wart, F. B., 1 *m*,
340 Putnam ave., Bklyn
Van Winkle, E., 2 *s*,
205 Tonnele ave., Jersey City
Vibbert, W. W., 4 *m*, 11 E. 24
Vinton, S., 4 *c*, New Rochelle
Virgin, F. O., 3 *m*, 148 W. 121
Vogel, K. M., 2 *m*, 231 W. 71
Vogel, M. H., 4 *c*, 56 E. 80
Vogel, W. P., sp *m*
Vogt, C. V., 2 *l*, Morristown
Vom Bauer, C. H., 2 *s*,
12 Boulevard pl.
von Deesten, H. T., 1 *m*,
230 Washington st., Hoboken
von Schrenk, A., 1 *s*,
1676 East End ave.
Vredenburgh, W., Jr., 4 *s*,
Marcher ave., High Bridge
Vreeland, C. Le F., 2 *m*,
48 Astor pl., Jersey City
Vreeland, W. N., 1 *m*,
94 Forrest st., Jersey City

Wachter, H. W., sp *s*, 252 W. 52
Wadhams, R. L., 3 *m*, 329 W. 58
Waechter, A. L., 3 *m*, 216 E. 12
Wagner, O., 2 *l*, 60 E. 93
Wagner, O., 2 *s*, 49 E. 72
Wagner, W., 3 *c*, 64 Macon st., Bklyn
Wainwright, J. M., 3 *m*
Wait, B. W., *pl*
Wakefield, F. S., 3 *m*, 141 W. 63
Walbridge, G. H., 1 *c*,
52 Irving pl., Bklyn
Walcott, G. D., *ph*, 41 E. 69
Waldo, R., 3 *s*, Mad. ave., 72d st.
Walker, C. F., 1 *l*, Guttenberg
Walker, I. L., 2 *m*
Walker, J. E., 3 *l*, 61 Henry st.
Walker, R., 2 *l*, 55 W. 74
Wallace, C., 4 *m*, 127 W. 72
Wallace, S. S., *pl*, 358 W. 116
Wallace, S. W., sp. *p*, 50 W. 93
Walmsley, H. B., 1 *m*, 122 W. 91
Walser, F. T., 1 *m*, W. New Brighton
Walsh, J. J. S., 1 *m*, West Chester
Walsh, L. A., 1 *s*, 356 W. 120
Walter, E. J., 2 *c*, 28 E. 60
Walters, L. L., *p*, 153 E. 56
Walther, A. W., sp *m*
Ward, E., 1 *c*, White Plains
Ward, S. L., 2 *c*, White Plains
Ware, A., 3 *s*, 1285 Mad. ave.

Ware, S. L., 1 *l*, 117 W. 95
Warner, C. H., sp. *pl*, 237 E. 104
Warren, G. L., 3 *m*,
77 Houston st., Newark
Washburn, P. C., 2 *m*, 118 W. 69
Washington, W. M., *ph*, 139 W. 71
Wason, D. B., 2 *m*, Port Richmond
Waterhouse, E. C., 4 *m*
Waterman, H. S., 1 *s*,
166 Hawthorne ave., Yonkers
Watson, E. L., 2 *m*, 415 W. 57
Watson, J., Jr., 4 *c*,
263 Hancock st., Bklyn
Watson, O., 3 *m*, 100 W. 92
Wattenberg, A. M., 1 *l*, 153 W. 103
Waugh, J. M., Jr., 4 *m*, 259 W. 69
Weaver, H. B., 1 *s*,
29 Chestnut lane, New Rochelle
Weaver, W. M., Jr., 3 *c*, 78 W. 54
Weber, L. G., 2 *m*, 569 Park ave.
Webster, W. C., sp *ph*, 350 W. 124
Wechsler, A. H., 1 *m*,
620 Flushing ave., Bklyn
Weed, V. W., 2 *m*,
675 Jefferson ave., Bklyn
Weekes, F. R., 2 *s*, 293 Lenox ave.
Weeks, C. Le M., 1 *c*, 157 W. 13
Weil, H. L., sp *c*, 42 W. 70
Weil, R., 2 *m*, 109 W. 77
Weimert, O. J., 1 *l*,
27 Morningside ave.
Weinstein, J. W., 2 *m*,
122 Columbia st.
Weinstein, M., 2 *c*, 544 W. 142
Weinstein, M., 3 *s*, 544 W. 142
Weir, W. N., sp *pl*, 41 E. 69
Weiss, F. H., 1 *m*., 137 W. 60
Weiss, L., 2 *m*,
235 E. Kinney st., Newark
Weisse, F. S., 2 *m*, 46 W. 20
Welch, J. E., 2 *m*, 318 W. 57
Welles, G., 1 *s*, 30 W. 59
Wells, J. G., 2 *m*, 71 W. 45
Wemlinger, J. R., 2 *s*, 304 W. 20
Wendt, C. R., 3 *l*, 40 W. 69
Wendt, J., 1 *l*, 72 W. 120
Wenmann, B. W., sp *pl*, 34 E. 61
Werdenschlag, A., 3 *l*, 140 W. 48
Wessell, A. L., sp *pl*, 47 W. 70
Wessells, E. H., 2 *s*, 43 W. 91
West, E. F., 1 *c*
Westcott, C. S., 1 *m*, 113 W. 64
Westerfield, W. R., 4 *c*, 109 W. 123
Weston, E. F., 1 *s*, 347 W. 122
Wetmore, W. S. K., 1 *l*,
37 St. Mark's pl.
Wettengel, W., 4 *m*, 154 E. 34
Weygandt, F. G., 1 *m*,
645 Bedford ave., Bklyn
Wheaton, C. F., 2 *l*,
224 Buena Vista ave., Yonkers
Wheeler, D. E., 4 *m*, 731 Park ave.
Wheeler, R. K., 3 *m*, 153 W. 61
Wheeler, W. L., 2 *m*, 262 W. 23
Wheelock, H. L., 2 *l*, Harvard Club
Whitacre, M., 3 *m*, 115 W. 63
Whitaker, C. H., *pl*, 41 E. 69
Whitbeck, S. V., 1 *m*, 140 W. 70
White, E. W., *p*
White, J. F., 2 *m*, 347 W. 28
White, R. H., 1 *c*,
119 Franklin st., Astoria
White, S. E., sp *c*, 127 Mad. ave.
White, T. G., sp *c*, 127 Mad ave.
Whitefield, W. B., 2 *m*
Whitehead, W. C., 2 *l*, 545 W. 125
Whitenack, M. R., 2 *m*,
19 Bathgate pl., Newark
Whitman, W. R., 1 *m*, 141 W. 64
Whittaker, T. S., 1 *c*, 71 E. 66
Whitten, R. H., *pl*, 520 W. 123
Wiers, E. S., *ph*, 41 E. 69
Wigham, R. E., 3 *l*, 142 E. 40
Wilcox, D. F., *pl*, 150 W. 22
Williams, A. S., 1 *s*, 8 W. 95
Williams, C. M., 4 *m*, 124 W. 65
Williams, H. T., 1 *m*, 47 W. 71
Williams, I. D., 1 *m*, 400 W. 57
Williams, J., sp *ph*, 551 5th ave.
Williams, J. N., 2 *c*, Bedford
Williams, J. T., Jr., 2 *s*, 871 Mad. ave.
Williams, L. R., 3 *m*, 149 E. 37
Williams, P. H., 1 *m*, 58 W. 82
Williams, T. M., 1 *m*, 114 W. 80
Williamson, H. C., 4 *m*, 456 W. 144
Willis, R. S., 1 *c*, 313 W. 76
Wilson, A. S., 2 *m*,
2575 Marion ave., Fordham
Wilson, C. L., 3 *m*, 139 W. 61
Wilson, D. L., sp *pl*, 41 E. 69
Wilson, E. E., 2 *m*, 455 W. 155
Wilson, H. D., Jr., 1 *c*, 75 W. 92
Wilson, J. D., Jr., 3 *c*, 69 W. 48
Wilson, L. G., 1 *s*, 308 W. 89
Wilson, W. C., 2 *m*, 129 W. 61
Winchester, W. H., 2 *m*, 447 W. 57
Wing, A. K., 3 *l*, 229 W. 121
Wing, P. W., 1 *m*, 13 W. 64
Wing, W. A., 1 *l*, 520 W. 123
Winter, A. L., 2 *m*, 110 W. 43
Wise, A. H., 1 *m*
Wise, H. M., 1 *c*, 102 W. 121
Woglom, W. H., Jr., 1 *m*,
243 McDonough st., Bklyn
Wolbarst, A. L., 4 *m*, 187 Henry st.
Wolf, W., sp *m*, 223 W. 115
Wolff, H. H., 3 *s*, 548 W. 148
Wolff, J. B., 1 *s*, 47 W. 54

Wood, C. K., 1 *m*, Huntington
Wood, J., 3 *l*, 40 Hart st., Bklyn
Wood, L. H., 2 *l*, Mt. Kisco
Wood, N. E., 1 *s*
Wooding, E. von R., 1 *s*, 529 Atlantic ave., Bklyn
Woodruff, H. A., 1 *m*, 517 Mad. ave.
Woodward, R. S., Jr., 1 *s*, Montclair
Wooton, E. O., *p*, 122 W. 109
Woolsey, W. C., 4 *m*, 147 W. 61
Wormser, M., 3 *c*, 836 5th ave.
Worthen, S. C., 4 *c*, 2265 7th ave.
Wortmann, M., 2 *c*, 126 E. 79
Wright, R. G., 2 *s*, 63 W. 96
Wurthmann, J. H., 4 *m*, 162 E. 66

Ybor, R. V. M., 1 *l*, San Remo Hotel
Yerzley, W. A., *p*, 127 W. 106
Yocum, J. G., 1 *m*, 111 E. 45
York, F. B., 1 *l*, 56 St. Mark's ave., Bklyn
Yohannan, I., sp *ph*, 175 9th ave.
Young, R. D., 4 *m*
Young, R. T., sp. *p*

Zabriskie, F. N., 3 *m*, 709 5th ave.
Zeiger, F., 4 *c*, Montclair
Ziegel, H. F. L., 1 *m*, 135 E. 62
Zinsser, H. W., 3 *c*, 14 W. 86
Zipser, M., 1 *s*, 614 Rivington st.

SUMMARY OF OFFICERS

Professors		63
Adjunct Professors		11
Clinical Professors and Lecturers		13
Demonstrators		4
Assistant Demonstrators		9
Instructors		48
Tutors		30
Assistants		44
Curators		3
Lecturers		13
Clinical Assistants		65
Officers of Instruction		303
Officers of Administration	12	
Emeritus Officers	9	
		21
Total		324

SUMMARY OF STUDENTS

At Columbia an effort is made to distinguish sharply between the college and the faculties of the university, the latter representing what Columbia believes pedagogically to be the university. From this point of view,

Columbia College is the college
The Faculty of Law
" " " Medicine
" " " Philosophy
" " " Political Science
" " " Pure Science
" " " Applied Science
} constitute the university.

College Seniors may study under any of the university faculties. The Faculties of Law, Medicine, and Applied Science are professional faculties, and conduct the professional schools, known as the School of Law, the College of Physicians and Surgeons, the School of Mines, the School of Chemistry, the School of Engineering, and the School of Architecture. The Faculties of Philosophy, Political Science, and Pure Science conduct the work generally organized elsewhere as the graduate school; but in addition they give much instruction not only to Seniors in the college, but also to regular students in the professional schools, a large percentage of whom are also college graduates. The table on the following page shows the total number of students studying in the college and under each faculty of the university, and also the number primarily registered in the college and under each faculty of the university. The first set of figures is free from duplication and shows the exact total of students in the university. The second set shows the number studying under each faculty, including duplicates; the duplication indicates the extent to which Columbia's wide educational tender is treated as a unified tender, regardless of subdivision by schools and faculties.

SUMMARY OF STUDENTS

		Primary Registration	Total Registration
THE COLLEGE:			
Senior class	48		
Junior "	55		
Sophomore "	90		
Freshman "	107		
Special students	26		
		326	327
THE FACULTY OF LAW:			
Third year class	94		
Second " "	134		
First " "	136		
Special students	2		
		366	375
THE FACULTY OF MEDICINE:			
Fourth year class	143		
Third " "	151		
Second " "	189		
First " "	220		
Special students	33		
Old curriculum student	1		
		737	741
THE FACULTY OF APPLIED SCIENCE:			
Graduate students	8		
Fourth year class	69		
Third " "	63		
Second " "	86		
First " "	179		
Special students	15		
		420	451
THE FACULTY OF POLITICAL SCIENCE		74	336
THE FACULTY OF PHILOSOPHY		115	247
THE FACULTY OF PURE SCIENCE		52	105
Total		2090	2582
FROM BARNARD COLLEGE		67	
AUDITORS		28	
Grand total		2185	

Academic Calendar

1897—Oct. 4—Monday. First half-year begins, 144th year.
Oct. 15—Friday. Last day of registration to obtain credit for residence for the full academic year.
Nov. 2—Tuesday. Election Day, holiday.
Nov. 25—Thursday. Thanksgiving Day, holiday.
Nov. 26—Friday. Holiday.
Dec. 20—Monday. Christmas holidays begin.
1898—Jan. 1—Saturday. Christmas holidays end.
Jan. 31—Monday. Mid-year examinations begin.
Feb. 12—Saturday. Lincoln's Birthday, holiday.
Feb. 12—Saturday. First half-year ends.
Feb. 14—Monday. Second half-year begins.
Feb. 22—Tuesday. Washington's Birthday, holiday.
Feb. 23—Ash-Wednesday. Holiday.
Mar. 1—Tuesday. Last day for filing applications for University Fellowships.
April 1—Friday. Last day for filing applications for higher degrees.
April 8—Good-Friday. Holiday.
May 2—Monday. Last day for presentation of essays for Degree of Master of Arts, and for filing applications for University Scholarships.
May 23—Monday. Concluding examinations begin.
May 30—Monday. Memorial Day, holiday.
June 8—Wednesday. Commencement.
Examinations for admission begin.
Sept. 26—Monday. Examinations for admission begin.
Oct. 3—Monday. First half-year, begins 145th year.

INDEX

Academic Calendar, 363.
Administration, Officers of, xi.
Admission, College, 152.
  Law, 180.
  Medicine, 196.
  Mines, Chemistry, Engineering, and Architecture, 254, 260.
  Philosophy, 288.
  Political Science, 279.
  Pure Science, 300.
  of Special Students, College, 152.
  to Advanced Standing, College, 160.
  to Advanced Standing, Law, 180.
  to Advanced Standing, Medicine, 203.
  to Other Courses, Political Science, 270.
  to the Bar, 181.
Advanced Standing, Admission to College, 160.
  Applied Science, 260.
  Law, 180.
  Medical School, 203.
Aid for Students, Committee on, 20.
Alumni Association Fellowships, 27.
  Prize, College, 25.
  Prize, Medical School, 28.
Competitive Scholarships, 24.
Scholarships, 24.
American Museum of Natural History, 32.
Anatomy, Department of, 35.
Anthropology, Department of, 37.
Apparatus Supplies, 264.
Appointments, Hospital, 210.
Arabic, Courses in, 112.
Archæology. *See* Greek.
Architecture, Department of, 38.
  School of, 230.
  Course in, 252.
Armenian, Course in, 114.
Assistants, 10.
  Clinical, 12.
Assyrian, Courses in, 112.
Astronomy, Department of, 42.
Attendance, Admission and, Applied Science, 260.
  Philosophy, 288.
  Political Science, 279.
Auditors, 17.
Award of Prizes and Honors, Commencement, 1897, 315.
Bacteriology. *See* Pathology.
Bar, Admission to the, 181.
Barnard College, 33, 318.
Barnard Fellow, Duties of, 22.
  Fellowship, 21.
  Medal, 31.
Bennett Prize, 30.
Botanical Garden, 33.
Botany, Department of, 43.
Brooklyn Scholarships, 25.
Buildings, Medical School, 194.
By-Laws, Mines, Chemistry, Engineering, and Architecture, 254.
Calendar, Academic, 363.
Candidates for a Degree, Political Science, 280.
Cartwright Prize, 28.
Certificates, Diplomas and, in Lieu of Examination, Mines, Chemistry, Engineering, and Architecture, 260.
Chanler Historical Prize, 27.
Chapel. *See* Public Worship.
Chemistry, Department of, 47.
  School of, 230.
  Courses in, 238.
Children, Diseases of, Department of, 54.
Civil Engineering, Department of, 57.
  Course in, 241.
Clark Scholarship, 27.
Clinic, Vanderbilt, 195.
Clinical Assistants, 12.
  Instruction. *See* Clinics.
  Lecturers, 4.
  Microscopy. *See* Pathology.
  Professors, 4.
Clinics, 200.
  At the Vanderbilt Clinic, 200.
  Dermatology, 54.
  Diseases of Children, 54.
  Genito-Urinary and Venereal Diseases, 75.
  Gynecology, 84.
  Hospital, 201.
  Laryngology, 87.
  Materia Medica and Therapeutics, 93.
  Neurology, 109.
  Ophthalmology, 110.
  Orthopædic Surgery, 115.
  Otology, 116.
  Practice of Medicine, 132.
  Surgery, 140.
College, The, 150–175.
College of Physicians and Surgeons, 193–229.
Columbia Fellowship, 29.
  University Press, 305.
Committee on Aid for Students, 20.
Committees, College, 150.
  Applied Science, 230.
  Trustees, x.
Comparative Jurisprudence, Courses in, 92.
Contents, Table of, iii.
Council, University, xii.
Course of Instruction, College, 164.
  Law, 177.
  Medicine, 196.
  Mines, Chemistry, Engineering, and Architecture, 231.

Course of Instruction, Philosophy, 289.
Political Science, 280.
Pure Science, 300.
Courses. *See* Departments of Instruction.
Curators, 12.
Degrees Conferred in, 1896–97, 307.
Doctor of Philosophy, 145.
Master of Arts, 145.
Master of Laws, 149.
University, 145.
Demonstrators, 5.
DEPARTMENTAL STATEMENTS. *See* Departments of Instruction.
DEPARTMENTS OF INSTRUCTION, 35.
Dermatology, Department of, 53.
Diplomas and Certificates in Lieu of Examination, Mines, Chemistry, Engineering, and Architecture, 260.
Directory of Officers, 330.
Students, 339.
Diseases of Children, Department of, 54.
Doctor of Philosophy, Regulations for Degree of, 145.
Drawing Academies, Laboratories and, Applied Science, 263.
Drisler Fellowship, 22.
Ear, Diseases of. *See* Otology.
Economics and Social Science, Department of, 54.
Education, Courses in, 123.
Philosophy and, 120.
Elective Courses. *See* under each Department.
for Juniors, College, 167.
for Seniors, College, 166.
Mines, Chemistry, Engineering, and Architecture, 232.
Electrical Engineering, Department of, 61.
Alternative, 250.
Course in, 245.
Emeritus Officers, 14.
Engineering, Division of, 57.
Civil, 57.
Electrical, 61.
Mechanical, 65.
Sanitary, Course in, 243.
School of, 230.
English, Division of, 71.
Composition, Rhetoric and, 74.
Language and Literature, 71.
Literature, 73.
Enrolment and Certificates, Mines, Chemistry, Engineering, and Architecture, 254.
Entering, Method of, 16.
Entrance Examinations, College, 152.
Mines, Chemistry, Engineering, and Architecture, 254.
Epigraphy, Course in, 111.
Equipment. *See* Departments of Instruction.
Ethics. *See* Philosophy.
Ethiopic, Course in, 112.
Examinations, College, 161.
Entrance, College, 152.
Mines, Chemistry, Engineering, and Architecture, 254.
Fees for. *See* Fees.
Law, 181.
Medicine, 203, 212.
Mines, Chemistry, Engineering, and Architecture, 261.
Preliminary, College, 159.
Mines, Chemistry, Engineering, and Architecture, 259.
Pure Science, 300
Excursions and Summer Schools, 263, 264.
Expenses, Students', 19.
Eye, Diseases of the. *See* Ophthalmology.
Faculty, College, 151.
Law, 176.
Medicine, 193.
Mines, Chemistry, Engineering, and Architecture, 230.
Philosophy, 287.
Political Science, 277.
Pure Science, 298.
Scholarships, 30.
Fees, 17.
Fellows Exempt from, 19.
Payment of, 18.
Fellows and Scholars, 311.
Fellowships, 20
Annual, 22.
Barnard, 21.
Class of '70, 22.
Columbia, 29.
Drisler, 22.
McKim, 29.
of the Alumni Association, P. & S., 27.
Regulations, 20, 30.
Tyndall, 21.
University, 20.
Finance, Courses in, 55.
Free Students, 19
Tuition, 19.
French, Courses in, 133.
GENERAL STATEMENT, 15.
Genito-Urinary and Venereal Diseases, Department of, 75.
Geodesy. *See* Astronomy.
Geology, Department of, 76.
Summer School in, 77.
German, Courses in, 79.
Germanic Languages and Literatures, Department of, 78.
Philology, Course in, 80.
Gothic, Course in, 80.
Graduation, Medical School, 209.
Theses, College, 163.
Greek, Department of, 81.
Gynecology, Department of, 83.
Harsen Prizes, 27.
Hebrew, Courses in, 111.
Higher Degrees. *See* University Degrees.
Histology, Normal. *See* Pathology.
History, Courses in, 85.
and Political Philosophy, Department of, 84.
Honorable Dismission, The College, 164.
Honors, College, 163, 316.
Hospital Appointments, 210.
Clinics, 201.
Indo-Iranian Languages, Department of, 113.
Instruction, Clinical. *See* Clinics.
Course of, College, 164.
Law, 177.
Medicine, 196.
Mines, Chemistry, Engineering, and Architecture, 231.
Philosophy, 289.
Political Science, 280.
Pure Science, 300.
Departments of, 35.
Officers of, 1.
Instructors, 6.
Italian, Courses in, 137.
Jurisprudence, Courses in, 92.
Public Law and, 91.
Laboratories and Drawing Academies, Applied Science, 263.
Laboratory Work. *See* Statements of Departments.
Language, Study of, 114.
Laryngology, Department of, 87.

Larynx, Diseases of. *See* Laryngology.
Latin, Department of, 89.
Law, Division of, 90.
Municipal, 90.
Private, 90.
Public, 91.
LAW, SCHOOL OF, 176–192.
Lecturers, 12.
Clinical, 4.
Library, Law, 181.
The, 33.
License to Practise Medicine, 211.
Literature, Department of, 73.
Loubat Prizes, 31.
McKim Fellowships, 29.
McLane Operating Theatre, 84.
McVickar Prizes, 26.
Marine Laboratory, 130, 144.
Master of Arts, Regulations for Degree of, 145.
Master of Laws, Regulations for Degree of, 149.
Materia Medica and Therapeutics, Department of, 93.
Mathematics, Department of, 93.
Matriculation Fees. *See* Fees.
Mechanical Engineering, Department of, 65.
Courses in, 247.
Dynamic Engineering Alternative, 249.
Mechanics, Department of, 96.
Medals, Barnard, 31.
Bunner, 24.
Sons of the American Revolution, 24.
Medicine, Practice of, Department of, 131.
MEDICINE, SCHOOL OF, 193–229.
Metallurgy, Department of, 98.
Course in, 236.
Metropolitan Museum, 32.
Mind, Diseases of the. *See* Neurology.
Mineralogy, Department of, 101.
Courses in, 101.
MINES, SCHOOL OF, 280.
Mining, Alternative, 251.
Department of, 103.
Summer School in, 105.
Engineering, Course in, 233.
Moffat Scholarship, 24.
Moot Courts, 180.
Municipal Law, 90.
Music, Department of, 107.
Nervous System, Diseases of. *See* Neurology.
Neurology, Department of, 108.
Normal Histology. *See* Pathology.
Nose, Diseases of. *See* Laryngology.
Obstetrics, Department of, 109.
Officers, Directory of, 330.
Emeritus, 14.
of Administration, xi.
of Instruction, 1.
of the Faculty of the College, 150.
Law, 176.
Medicine, 193.
Mines, Chemistry, Engineering, and Architecture, 230.
Philosophy, 287.
Political Science, 277.
Pure Science, 298.
Summary of, 361.
Ophthalmology, Department of, 110.
Order, Mines, Chemistry, Engineering, and Architecture, 263.
of Studies, Political Science, 281.
Oriental Languages, Division of, 110.
Orthopædic Surgery, Department of, 115.
Other Institutions, Privileges Open in, 32.
Otology, Department of, 116.
Parentage of Degrees, Law, 190.
Pathology, Department of, 116.
Payment of Fees, 18.
Pharynx, Diseases of. *See* Laryngology.
Philology, Courses in Romance, 138.
Philosophy, Psychology, and Education, Department of, 120.
PHILOSOPHY, SCHOOL OF, 287–297.
Photography, 119.
Photomicrography. *See* Pathology.
Physics, Department of, 126.
Physiology, Department of, 129.
Marine Laboratory, 130.
Political Economy, Courses in, 55.
Prize in, 30.
Political Philosophy, Courses in, 86.
History and, Department of, 84.
POLITICAL SCIENCE, SCHOOL OF, 277–286.
Portuguese, Course in, 138.
Practice of Medicine, Department of, 131.
Practise Medicine, License to, 211.
Preliminary Examinations, College, 159.
Mines, Chemistry, Engineering, and Architecture, 259.
Prepayment of Fees, 19.
President's University Scholarships, 23.
Private Law, 90.
Privileges Open in Other Institutions, 32.
Prize, Alumni Association, College, 25.
Medicine, 28.
Bennett, 30.
Cartwright, 28.
Chanler Historical, 27.
Grant Squires, 32.
Political Economy, 30.
Lectureships, Political Science, 30.
Joseph Mather Smith, 29.
Stevens Triennial, 28.
Toppan, 30
Prizes, Award of, and Honors, 315.
Harsen, 27.
Loubat, 31.
McVickar, 26.
Medical School, 27.
School of Political Science, 30.
Professors, 1.
Clinical, 4.
Proficiency and Deficiency, College, 162.
Provençal, Courses in, 137.
Psychology. *See* Philosophy.
Public Law and Jurisprudence, Department of, 91.
Public Law, Courses in, 92.
Worship, 33.
Publications of the University, 305.
PURE SCIENCE, SCHOOL OF, 298–304.
Purposes of the Law School, 176.
Reduced Tuition, 19.
Register of Students, College, 168.
Law, 182.
Medicine, 213.
Mines, Chemistry, Engineering, and Architecture, 266.
Philosophy, 290.
Political Science, 282.
Pure Science, 301.
Regulations, Fellowship, 20, 30.
Special, Pure Science, 299.
University Fellowship, 20, 30.
University Scholarship, 23.
Religion and Learning Scholarships, 24.
Rhetoric and English Composition, Department of, 74.
Roman Law, Courses in, 92.
Romance Languages and Literatures, Department of, 132.
Romance Philology, Courses in, 138.
Rumanian, Course in, 138.

Sanitary Engineering, Course in, 243.
Scandinavian, Courses in, 80.
Schermerhorn Scholarships, 24.
Scholars, Fellows and, 313.
Scholarship, Alonzo Clark, 27.
Scholarships, 20.
Alumni, 24.
Competitive, 24.
Brooklyn, 25.
Faculty, 24.
Moffat, 24.
President's University, 23.
Religion and Learning, 24.
Schermerhorn, 24.
Stuart, 25.
Theological Seminary, 25.
University, 23.
SCHOOL OF LAW, 176–192.
MEDICINE, 193–229.
MINES, CHEMISTRY, ENGINEERING, AND ARCHITECTURE, 230–276.
PHILOSOPHY, 287–297.
POLITICAL SCIENCE, 277–286.
PURE SCIENCE, 298-304.
Semitic Languages, Department of, 110.
Epigraphy, 111.
Serial Studies and Contributions Issued from the University, 306.
Sloane Maternity Hospital, 110, 196.
Smith, Joseph Mather, Prize, 29.
Social Science, Economics and, 54.
Sociology, Courses in, 56.
Sons of the Revolution Medal, 24.
Spanish, Courses in, 137.
Special Fees, Medicine. *See* Fees.
Mines, Chemistry, Engineering, and Architecture. *See* Fees.
Students, College, 152.
Law, 181.
Mines, Chemistry, Engineering, and Architecture, 232, 263.
Philosophy, 289.
Political Science, 279.
Pure Science, 300.
Squires, Grant, Prize, 32.
Standing, Mines, Chemistry, Engineering, and Architecture, 261.
Examinations and, Medical School, 203, 204.
STATEMENT, GENERAL, 15.
Statistics, Courses in, 56.
Stevens Prize, 28.
Stuart Scholarships, 25.
Students' Expenses, 19.
Students, Free, 19.
Committee on Aid for, 20.
Register of, College, 168.
Students, Law, 182.
Medicine, 213.
Mines, Chemistry, Engineering, and Architecture, 266.
Philosophy, 290.
Political Science, 282.
Pure Science, 301.
Directory of, 339.
Summary of, 362.
Study of Language, 114.
Summary of Officers, 361.
Students, 362.
Summer School in Geology, 77.
in Mining, 105.
in Surveying, 60, 264.
Work in Mechanical Engineering, 71.
Summer Schools, Excursions and, 263, 264.
Surgery, Department of, 139.
Surveying, Summer School in, 60, 264.
Syriac, Courses in, 112.
Table of Contents, iii.
TEACHERS COLLEGE, 33, 327.
Courses at, 124.
Theological Seminary Scholarship, 25.
Therapeutics, Materia Medica and, 93.
Theses, Graduation, College, 163.
Toppan Prize, 30.
Treasurer, ix.
Trustees, ix.
Committees, x.
Tuition, Free, 19.
Fees. *See* Fees.
Reduced, 19.
Turkish, Course in, 112.
Tutors, 8.
Tyndall Fellow, Duties, 22.
Fellowship, 21.
Undergraduate Courses, Mines, Chemistry, Engineering, and Architecture, 231.
Union Theological Seminary, 32.
Courses at, 83, 113.
University Bulletin, 305.
Council, xii.
Courses, Mines, Chemistry, Engineering, and Architecture, 232.
Degrees, 145.
Fellowship Regulations, 20, 30.
Fellowships, 20.
Scholarships, 23.
Vanderbilt Clinic, 195.
Clinical Assistants at the, 12.
Clinics at, 200.
Venereal Diseases, Genito-Urinary and, Department of, 75.
Withdrawal, 19.
Wood's Holl, 130, 144.
Zoölogy, Department of, 140.